1965

MARATHON

AUTOMOTIVE SERVICE GUIDE

LUBRICATION
TUNE-UP
BRAKE ADJUSTMENT
WHEEL ALIGNMENT

MARATHON OIL COMPANY

MARATHON KEY TO LUBRICANTS

Symbols are used in the guide to represent lubricant recommendations approved by the manufacturers. The table below keys the MARATHON products to those recommendations. For symbols not listed, use product described by manufacturer as shown on each individual page.

When you see this symbol	Use this MARATHON product
MO	For API Service MS, DG, DM, S1 — EXTENDED LIFE V.E.P. 5W-30 / ALL-SEASON V.E.P. 10W-30 / V.E.P. HEAVY DUTY — Detergent Motor Oils DS — SERIES 3 V.E.P. — Detergent Motor Oils MM, ML — ENDURANCE—Non-Detergent Motor Oil Note: Where manufacturer recommends SAE 5W or SAE 5W-20, use Extended Life V.E.P. 5W-30 Motor Oil; for 20W-40, All-Season V.E.P. 10W-30 may be used
TO	OUTBOARD 2-CYCLE MOTOR OIL
BJ BL CG CL GG LM SG WG	MARALUBE "MOLY"—preferred MARALUBE NO. 2
BR SB UJ WB	MARAGREASE B—preferred MARALUBE "MOLY" MARALUBE NO. 2
WP LL	WATER PUMP LUBRICANT
EP GL4, GL4* HP, HP* MP, MP*	570 SERIES MULTI-PURPOSE GEAR COMPOUND (Approved for use in Limited-Slip Differentials) Note: Where manufacturer recommends SAE 75, use SAE 80
GL	550 SERIES GEAR LUBRICANT
AF FA	AUTOMATIC TRANSMISSION FLUID TYPE A, SUFFIX A

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MANUFACTURERS' OIL CHANGE RECOMMENDATIONS

Crankcase oil change interval recommendations of motor vehicle manufacturers are not shown on lubrication charts due to the variation between them. Individual recommendations, however, are important and should be considered.

In general, the crankcase oil must be changed more frequently during cold weather and for stop-and-start driving than is necessary during warm weather and for long high-speed trips. Since the average car is driven 9 to 10 thousand miles a year, the oil, in most cases, should be changed on a time rather than mileage basis. This is especially true for the second car in a family where it is used for shopping and "suburban taxi service."

Remember: Crankcase oil change and refill service, performed more frequently, offers assured protection; ignoring oil change recommendations offers only the possibility of serious damage.

PASSENGER CARS

BUICK

Initial and subsequent oil changes should be made as follows:

1963-65—Every 60 days or 6,000 miles, whichever occurs first.

1962 and prior—Anticipated lowest temperature above +32°, every 60 days or 4,000 miles, whichever occurs first; below +32°, every 30 days or 4,000 miles, whichever occurs first.

Exceptions: If there is danger of oil contamination by dust, water, or other foreign material during very extreme driving conditions, the oil should be changed more frequently.

CADILLAC

Initial and subsequent oil changes should be made as follows:

1963-65—Every 60 days or 6,000 miles, whichever occurs first.

1962 and prior—For prevailing temperatures above +32°, every 60 days or 4,000 miles, whichever occurs first; below +32°, every 30 days or 4,000 miles, whichever occurs first.

Exceptions: If there is danger of oil contamination by dust, water, or other foreign material during very extreme driving conditions, the oil should be changed more frequently. In such cases, an engine oil change is recommended after 2,000, or even 1,000 miles of driving.

CHEVROLET

Initial and subsequent oil changes should be made as follows:

1963-65—Every 60 days or 6,000 miles, whichever occurs first. Under prolonged dusty driving conditions, it is recommended that the engine oil be changed more often.

1962 and prior—Above +32°, every 60 days or 4,000 miles, whichever occurs first; below +32° or during adverse driving conditions, every 30 days or 4,000 miles, whichever occurs first. During extreme dusty driving conditions it may be necessary to change oil more often.

CHRYSLER

Initial and subsequent oil changes should be made as follows:

1964-65—Highway driving, combined with SOME SHORT TRIP, SLOWER SPEED OPERATIONS, extends the effectiveness of the engine oil and permits the oil to be changed every 3 months, or 4,000 miles, whichever comes first. SHORT TRIPS (less than 10 miles) and slow speeds cause harmful condensation and sludge formation. Driving under these conditions requires that the oil be changed every 3 months regardless of mileage.

Exceptions: Severe operating conditions, such as driving on dusty roads, or in a sandy geographical area, or unusually short trip driving in cold weather may require oil changes oftener than every 3 months.

1963—OIL CHANGE INTERVALS of up to 4,000 miles are recommended. HOWEVER, SHORT TRIP OR SEVERE OPERATING CONDITIONS frequently encountered in normal driving can greatly reduce the protective life of the oil and NECESSITATE MORE FREQUENT CHANGES. For most types of driving, the oil should be changed every 2 months.

1962 and prior—Every 4,000 miles or 2 months, whichever occurs first.

Exceptions: Short-trip driving in cold weather, or driving on dusty roads can make a change of oil advisable more frequently and at times as frequent as every 500 miles.

DODGE, DODGE DART, DODGE LANCER

Same as CHRYSLER.

FORD

Initial and subsequent oil changes should be made as follows:

1962-65—Every 6,000 miles or 6 months, whichever occurs first.

Exceptions: If a replacement filter other than the Ford Rotunda filter, or engine oils other than those recommended are used, more frequent engine oil and filter changes may be required.

1960-61—Every 4,000 miles or 4 months, whichever occurs first.

Exceptions: If your car is driven often in stop-and-go traffic, on short trips or through dusty areas, service more frequently.

IMPERIAL

Same as CHRYSLER.

'JEEP'

CHANGE INTERVAL	MILES
Initial	500 or 10 hours power take-off or off-highway operation.
Average	2,000 or 50 hours power take-off or off-highway operation, except models with 6-230 engine, 6,000 miles or 50 hours power take-off or off-highway operation.

Exceptions: Change engine oil more frequently depending on type and quality of oil used, severity of operating conditions and if vehicle is driven short distances in cold weather or allowed to idle excessively.

LINCOLN CONTINENTAL

Initial and subsequent oil changes should be made as follows:

1961-65—Every 6,000 miles or 6 months, whichever occurs first.

Exceptions: If a replacement filter other than the Genuine Rotunda filter, or engine oils other than those recommended are used, more frequent engine oil and filter changes may be required.

MERCURY, MERCURY COMET

Initial and subsequent oil changes should be made as follows:

1962-65—Every 6,000 miles or 6 months, whichever occurs first.

Exceptions: If a replacement filter other than the Genuine Rotunda filter, or engine oils other than those recommended are used, more frequent engine oil and filter changes may be required.

1960-61—Every 4,000 miles or 4 months, whichever occurs first.

Exceptions: More frequent changes are required under abnormal driving conditions, such as consistent high speeds in high temperature areas, extremely dusty areas, or frequent low speeds and engine idling periods in low temperature areas.

OLDSMOBILE

Initial and subsequent oil changes should be made as follows:

1963-65—Every 60 days or 6,000 miles, whichever occurs first.

1962 and prior—Prevailing daylight temperature above +32°, every 60 days or 4,000 miles, whichever occurs first; below +32°, every 30 days or 4,000 miles, whichever occurs first.

Exceptions: Certain driving conditions, such as dust storms and frequent driving on dusty roads, necessitate more frequent oil changes.

PLYMOUTH, PLYMOUTH-VALIANT

Same as CHRYSLER.

PONTIAC, PONTIAC TEMPEST

Initial and subsequent oil changes should be made as follows:

1963-65—Every 60 days or 6,000 miles, whichever occurs first.

When driving on dusty roads, in dust storms or during extreme driving conditions which include long periods of engine idling, the oil should be changed more frequently to prevent the danger of oil contamination.

1961-62—Every 60 days above +32°, every 30 days below +32° or every 4,000 miles, whichever occurs first.

1958-60—Above +32°, 60 days; below +32°, 30 days, never to exceed 4,000 miles, or 1,000 miles under dusty conditions.

Exceptions: 1958-61, adverse driving conditions, such as short trip winter driving (less than 10 miles average per trip), makes it advisable to change oil every month. Similar short trips in the summer make it advisable to change oil every two months.

RAMBLER

Initial and subsequent oil changes should be made as follows.

Favorable conditions (over 10 miles average per trip) every 4,000 miles; summer (over +32° average), less than 10 miles average per trip every 2,000 miles; winter (below +32° average), less than 10 miles average per trip every 1,000 miles. For dusty driving conditions every 1,000 miles.

For cars not equipped with an engine oil filter, all mileages shown above should be reduced by one half.

STUDEBAKER

CHANGE INTERVAL	MILES
Initial	1,000
Average	1965—6,000 miles; however, regardless of mileage, above 0° every 60 days, below 0° every 30 days. 1964—6,000 miles or 60 days. 1963, and 1962 with full-flow oil filter—4,000 miles. 1962 without full-flow oil filter, and prior years—2,500 to 3,000 miles.

Exceptions: Severe operation, dust-bowl driving, and other unusual circumstances may make more frequent oil changes necessary.

1963 and prior years—Regardless of mileage, oil should be changed every 30 days during winter (temperatures below +32°), every 60 days during summer (temperatures above +32°)

MANUFACTURERS' OIL CHANGE RECOMMENDATIONS

IMPORTED CARS

AUSTIN HEALEY

CHANGE INTERVAL	MILES
Initial	1,000
Average	3,000

Exceptions: More frequent changes are required for stop-and-go operation, prolonged idling periods, dusty road travel, or during extended cold or wet climatic conditions.

FIAT

CHANGE INTERVAL	MILES
Initial	900 to 1,200
Second	1,800 to 2,400
Average	1961 and prior, 1,500 miles; 1962 to March 1963, 3,000 miles; April 1963 and later, 6,000 miles or 6 months, whichever occurs first.

Exceptions: 6,000 mile or 6 month interval on late models is suitable only when "MS" oil of highest quality is used.

FORD

CHANGE INTERVAL	MILES
Initial	300, except Cortina, 500.
Average	5,000 or 3 months, whichever occurs first; except without oil filter, 2,000.

Exceptions: Where car is being operated in, say, an excessively dusty atmosphere, the oil could require changing more often than is specified for normal operating conditions.

HILLMAN

CHANGE INTERVAL	MILES
Initial	500
Average	1965 Super Minx Mark III, 6,000 miles; 1962-65 Super Minx Mark I and II, 1964-65 Minx Series V, 1964-65 Husky Series III, 3,000; other 1962 and earlier, 2,000.

Exceptions: Extend average interval for favorable driving, such as long-distance journeys, with little or no engine idling on well-surfaced roads reasonably free from dust. Reduce average interval for unfavorable driving, such as habitual stop-start driving, especially when there is appreciable engine idling, or when much driving is done under dusty conditions.

JAGUAR

CHANGE INTERVAL	MILES
Initial	500 except 4.2 Liter E-type and 3.8 "S," 1,000.
Average	2,500 except 4.2 Liter E-type and 3.8 "S," 3,000.

Exceptions: Under certain adverse operating conditions, conducive to oil dilution and sludge formation, more frequent oil changing is advised. Where the car is used mainly for low-speed city driving, stop-start driving particularly in cold weather or in dusty territory the oil should be changed at least every 1,000 miles.

MERCEDES-BENZ

CHANGE INTERVAL	MILES
Initial	300
Average	Gasoline engine, 2,500, except with new type filter, 3,800; diesel engine, 1,900.

Exceptions: Gasoline engine, if driving in the city or on dusty roads every 1,250 miles, except with new type filter, 1,900 miles. Diesel engine, if driving in the city or on dusty roads correspondingly sooner.

M.G.

CHANGE INTERVAL	MILES
Initial	1,000
Average	3,000

Exceptions: More frequent changes are required with stop-and-go operation, prolonged idling periods, dusty road travel, or during extended cold or wet climatic conditions.

OPEL

1958-63 except Kadett

Average drain: 2,000 miles

Exceptions: More frequent oil changes are also advisable in dusty areas or during cold weather, particularly under short run operations.

1963-65 Kadett

Initial drain: 1,000 miles

Average drain: Every 60 days or 3,000 miles, whichever occurs first.

Exceptions: If there is danger of oil contamination by dust, water or other foreign material during extreme driving conditions, then the oil should be changed more frequently.

PEUGEOT

CHANGE INTERVAL	MILES
Initial	600
Average	2,000

PORSCHE

CHANGE INTERVAL	MILES
Initial	300
Second	1,500
Average	1,500

RENAULT

CHANGE INTERVAL	MILES
Average	1955-61, 1,500; 1962-65, 3,000.

Exceptions: When the car is used constantly for short-trip, start-stop driving (especially in winter), or over dusty roads, the engine oil should be changed more frequently as such conditions lead to excessive contamination of the oil.

SIMCA

1963-65 1000 Series

Initial drain: 600 miles

Average drain: 3 months or 4,000 miles.

Exceptions: Highway driving combined with some short trip, slower-speed operation extends the effectiveness of the engine oil and permits oil changes every 3 months or 4,000 miles, whichever occurs first. Short trips, less than 10 miles, and slow-speed typical city operation requires that the oil be changed every 3 months regardless of mileage. Severe operating conditions such as frequent driving on dusty roads or in sandy geographic areas require the oil be changed more frequently than every 3 months.

1962-63 Simca 5—Average drain: 3,000 miles.

1956-61 Aronde Series—Average drain: 1,500 miles.

Exceptions: When the operation is short-trip driving in cold weather almost exclusively, or when driving on dusty roads, oil changes should be made more frequently—as often as every 500 miles.

SUNBEAM

CHANGE INTERVAL	MILES
Initial	500
Average	Alpine Series IV, 6,000 miles. Others: 1963-65, 3,000 miles; 1962 and earlier, 2,000 miles.

Exceptions: Extend average interval for favorable driving, such as long-distance journeys, with little or no engine idling on well-surfaced roads reasonably free from dust. Reduce average interval for unfavorable driving, such as habitual stop-start driving, especially when there is appreciable engine idling, or when much driving is done under dusty conditions

TRIUMPH

CHANGE INTERVAL	MILES
Initial	500, except TR4, 1,000.
Average	3,000

Exceptions: Extend 3,000 mile interval for favorable driving, such as long-distance journeys with little or no engine idling, on well-surfaced roads reasonably free from dust. Reduce 3,000 mile interval for unfavorable driving, such as frequent stop-start operation during cold weather especially when appreciable engine idling is involved, or when much driving is done under dusty conditions.

VAUXHALL

CHANGE INTERVAL	MILES
Initial	1,000
Average	Above +32°, 60 days, Below +32°, 30 days, Never to exceed 4,000.

VOLKSWAGEN

CHANGE INTERVAL	MILES
Initial	300
Second	1,500
Third and thereafter	3,000

Exceptions: In extreme dust conditions, or stop-and-go operation, or operation during extreme cold weather, change oil every 1,500 miles.

VOLVO

CHANGE INTERVAL	MILES
Initial	1,500
Average	3,000

Exceptions: During winter and for short-trip driving change oil after every 1,500 miles.

LIGHT TRUCKS

CHEVROLET

All, ex. Corvair 95

Initial drain: 1,000 miles

Average drain: 60 days or 2,000 miles, whichever occurs first, except as follows:

C10, P10, C20, C30, C40: 1964-65—60 days or 6,000 miles; 1962-63—60 days or 4,000 miles.

1963-65—Under unfavorable driving conditions such as frequent long runs at high speeds and high speeds and high loads, driving under severe dust conditions, and short runs in cold weather which promote accumulation of moisture condensation in the crankcase, it becomes necessary to thoroughly drain the oil more frequently.

1962 and prior—Frequent long runs at high speed, or continuous driving with heavy loads . . . Driving over dusty roads or through dust storms . . . Short runs in cold weather, such as city driving, and excessive idling . . . While no definite drain periods can be recommended under these conditions, they should be more frequent than under normal driving conditions.

Corvair 95 Same as shown for "Chevrolet" in passenger car section.

DODGE

Initial and subsequent oil changes should be made as follows:

All 1965 models and 1964 A-100—Every 3 months or 4,000 miles, whichever occurs first, or 50 hours.

1963-64 except 1964 A-100—Every 2,000 miles or 50 hours.

1962 and prior—Every 2,000 miles.

Exceptions: WINTER DRIVING—If the truck is driven for short distances of only a few miles at a time and at low speeds, moisture will condense in the crankcase and form a sludge. Under conditions of this kind, the engine does not become sufficiently warm to expel the condensation through the crankcase ventilating system; therefore, the oil should be changed approximately every 500 miles (1963-65, 1,000 miles) and under extreme conditions more often than every 500 miles (1963-65, 1,000 miles).

DUSTY CONDITIONS—Driving over dusty roads or through dust laden air greatly increases the problem of keeping abrasive materials out of the engine. Under these conditions . . . the engine oil and oil filter, or oil filter element should be changed more frequently. The frequency will depend upon the severity of the dust conditions. Therefore, no definite recommendations can be made.

FORD

Initial and subsequent oil changes should be made as follows:

1962-65 Econoline; 1965 F-100, F-250—Every 6,000 miles or 6 months, whichever occurs first.

Others—Every 4,000 miles or 4 months, whichever occurs first.

Exceptions: If a replacement filter other than the Ford Rotunda [illegible] engine oils other than those recommended are used, more frequent engine oil and filter changes may be required.

1965 F-350: During light duty operation, interval may be extended to 6,000 miles or 6 months.

1962-63 models, off-highway operation, every 4,000 miles or 3 months.

If engine oil gets unusually dirty between recommended oil change periods, due to conditions under which the truck is operated, change both oil and engine oil filters more frequently to suit the particular situation.

1957-61—Every 4,000 miles.

Exceptions: More frequent draining is suggested if loading is maximum or above, if 25 per cent or more of driving is done in stop-and-go traffic, or short trips of less than 20 miles or if airborne dust exceeds suburban and paved street areas, or if industrial contamination exists. Off-highway operation, drain every 2,000 miles; every 1,000 miles extreme dust, extended idling and short run operation.

GMC

All except G-1000

Initial drain: 3,000 miles

Average drain as follows; however, an oil analysis should be made to determine if more or less frequent oil changes are required.

Above +32°	Every 4,000 miles or every 2 months, whichever occurs first.
Below +32°	Every 4.000 miles or every month, whichever occurs first.

G-1000

Initial and subsequent oil changes should be made as follows:

Every 6,000 miles or 60 days, whichever occurs first.

INTERNATIONAL

CHANGE INTERVAL	MILES
Initial	1,000
Average	3,000 to 4,000

Exceptions: More frequent oil changes are required depending upon the rate of oil contamination caused by extreme dusty conditions, multi-stop and cold weather operations.

'JEEP'

CHANGE INTERVAL	MILES
Initial	500 or 10 hours power take-off or off-highway operation.
Average	2,000 or 50 hours power take-off or off-highway operation, except models with 6-230 engine, 6,000 miles or 50 hours power take-off or off-highway operation.

Exceptions: Change engine oil more frequently depending on type and quality of oil used, severity of operating conditions and if vehicle is driven short distances in cold weather or allowed to idle excessively.

KNOW YOUR CHART

TUNE-UP DATA

Approved specifications listed in an easy-to-use sequence of operations that provides all the essentials of minor tune-up

BATTERY

Testing assures positive starts — pinpoints replacement needs

PLUGS—POINTS—CONDENSER

Specifications necessary for replacing or servicing these critically important ignition units

CYLINDER NUMBERING

Indicates number of all cylinders with emphasis on No. 1 for timing purposes, on the No. 1 distributor cap tower in relation to cap clips, on direction of rotor rotation as viewed from top, and on firing order

TIMING PROCEDURE

A step-by-step method for setting ignition timing that provides a simple procedure for a vital service

TIMING MARK

Clearly shown just as they appear to you for accurate timing setting

FUEL PUMP

Model numbers for pump replacement — specifications for accurate testing

CARBURETOR

Mixture adjustments — automatic choke settings —idle speed adjustments

DRAIN LOCATION

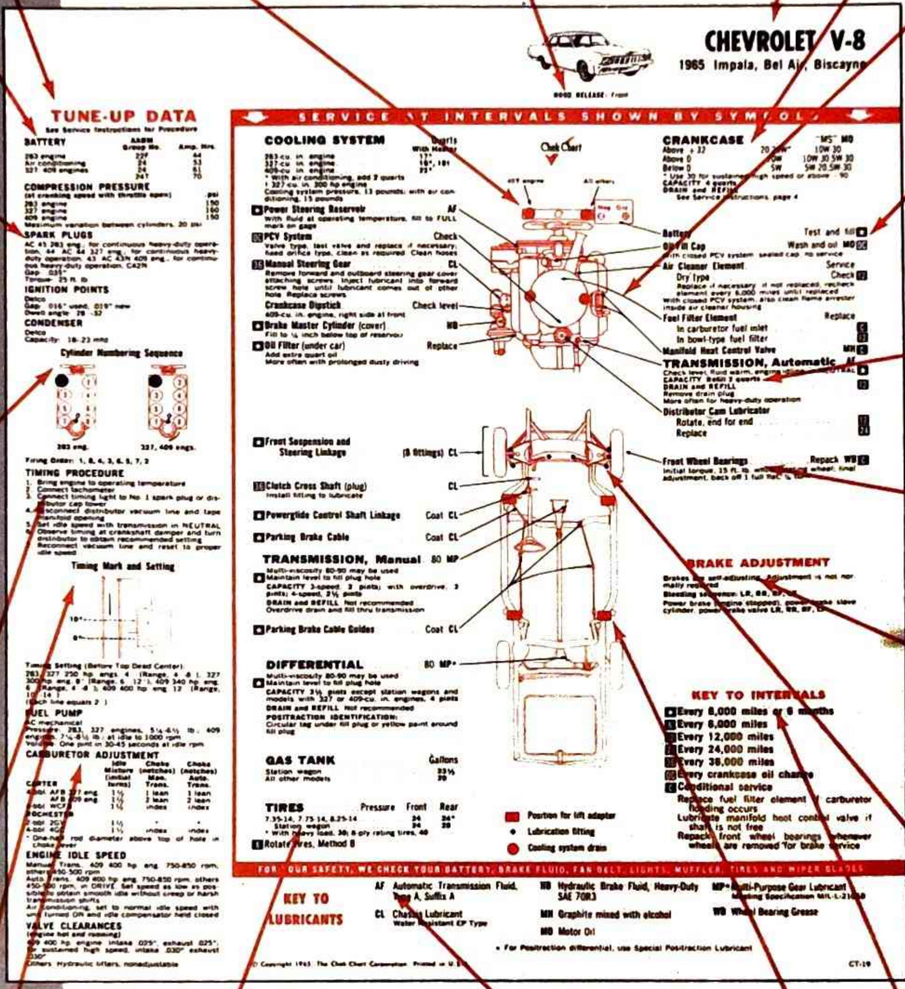
Large red dots indicate the cooling system drain locations — capacities and cooling system pressure are also specified

HOOD RELEASE

Knowing where to open the hood eliminates groping in front of customer

IDENTIFICATION

Car names and illustrations assure correct model identification



CHEVROLET V-8

1965 Impala, Bel Air, Biscayne

TUNE-UP DATA

SERVICE AT INTERVALS SHOWN BY SYMBOL

KEY TO LUBRICANTS

TIRES

Tire sizes and recommended cold pressures, plus interval and method for tire rotation

KEY TO LUBRICANTS

Fully identifies the lubricant symbols that appear on the chart

LIFT ADAPTERS

Precise positions of frame contact lift adapters are indicated by red rectangles to assure lifting the car correctly and safely

CRANKCASE

Complete crankcase service information: grade of motor oil to use and crankcase capacity

ENGINE

Enlarged diagram clearly illustrates all underhood service points

INTERVALS

Figure in black square shows mileage at which service is needed. The star symbol "flags" the points to be serviced at each lubrication and Safety Chek

CAPACITIES

Capacities and all other pertinent information is grouped at the point of service

WHEEL BEARINGS

Repacking intervals shown and, when prescribed, adjustment torque specifications

BRAKES

A simple step-by-step procedure for performing minor brake adjustment. Brake system bleeding sequence is also given

LUBE FITTINGS

Indicated by large black dots. Truck charts with black circle "O" symbol indicate fitting is not on all models. Prepacked bearings requiring inspection and/or service are indicated by black triangles

INTERVAL KEY

Explains mileage symbols around diagram, which indicate when service is required. When time and mileage intervals are shown, service at whichever occurs first

SERVICE INSTRUCTIONS

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CRANKCASE SERVICE

when to change motor oil •

Crankcase oil is contaminated by unburned fuel, water, soot, and similar combustion by-products. Dirt and airborne abrasive particles also contaminate oil. In time, contamination reduces lubricating quality of a motor oil to a point where severe engine damage can result. Oil change intervals are planned to avoid this needless engine wear.

Passenger car oil contamination and deterioration is most severe in short-trip, stop-and-go driving. Least severe oil service is in consistent, normal-speed highway driving.

The American Petroleum Institute (API) recommended crankcase drain and refill interval is:

Change oil —
At Least every 60 days.

Car and light truck manufacturers' crankcase drain recommendations are based upon normal or favorable driving conditions. Most manufacturers recognize that the mileage interval must be reduced for certain types of driving.

Frequent oil changes, based on actual driving conditions, are the best insurance for long, trouble-free engine life.

selecting motor oil

Refer to the charts for correct grade and service designation of motor oil for the automobile being serviced. *Grade* is the viscosity rating according to the Society of Automotive Engineers (SAE) numbering system. *Service designation* is based on the API Engine Service Classification System.

Severity of gasoline engine service is a combination of engine design and driving conditions. Higher horsepower, higher compression and increased piston displacement increase the service severity of an engine. API Service Classifications for various motor oils and their application are:

Service MS—Severe Service

High-compression engines.
Much stop-and-go, short-trip driving.
Extremes in engine temperatures.

Service MM—Moderate Service

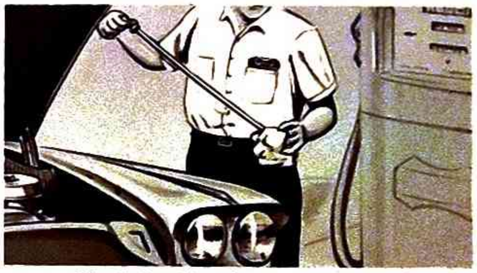
Less critical engines.
Moderate stop-and-go, short-trip driving.
Moderate engine temperatures.

Service ML—Light Service

Noncritical older engines.
Little stop-and-go, short-trip driving.
Mostly moderate speeds.
No temperature extremes.

Motor oil service classifications for diesel engines are DG, DM and DS. Oils designated for both gasoline and diesel engines may be identified as: For Service MS—DG.

Most car manufacturers specify oils designated For Service MS, and state that the oil must be represented as having passed the Sequence tests. These five tests are conducted in a specified sequence at varying speeds and controlled temperatures to evaluate oil's ability to prevent scuffing, wear, rusting, corrosion, sludge and varnish deposits. Emphasis is placed on antisludging, anticlogging and insoluble suspension characteristics.



Check dipstick each time car is serviced

crankcase drain and refill procedure

Always drain crankcase while oil is hot. Suspended dirt and contaminants in the oil will drain out more completely.

crankcase level check procedure

Check crankcase motor oil level every time a car is serviced. Add oil only to the dipstick full mark. Do not overfill. Overfilling cars with hydraulic valve lifters may cause foaming of the oil and noisy valve lifter operation.

ENGINE ACCESSORY LUBRICATION

All points of service are shown on the engine illustration on each chart.

accelerator pump shaft

The accelerator pump shaft is lubricated through screw and oil holes or by a felt lubricating ring.

Lubricating Through Screw and Oil Holes:

- Remove carburetor air cleaner.
- Remove screw(s) fastening pump shaft assembly dust cover.
- Fill hole(s) with recommended lubricant.
- Replace dust cover screw(s).
- Replace air cleaner.

• For car and truck manufacturers' oil change recommendations, see pages 1 and 2

Lubricating Felt Ring:

- Remove carburetor air cleaner.
- Remove pump shaft assembly dust cover.
- Saturate felt ring with lubricant recommended on chart.
- Replace dust cover and air cleaner.

air conditioning

Heaters of these cars are mounted next to the air-conditioning evaporator:

1955-56	Chevrolet	1957-65	Dodge
1957-65	Chrysler	1957-65	Imperial
1958-60	Continental	1958-60	Lincoln
1957-61	DeSoto	1957-65	Plymouth

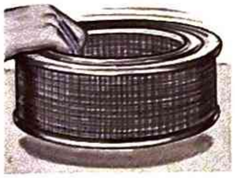
Evaporator temperature might freeze water in the heater core of these cars under certain conditions. To prevent freezing, add sufficient permanent type antifreeze to form 20% of total cooling system capacity, protecting to +15°F. during summer months. Use recommended anti-freeze mixture during freezing weather as if the car was not equipped with air conditioning.

carburetor air cleaner

Service intervals given on each chart are for normal conditions. If operating in dust conditions, service twice or three times as often. Procedures for servicing various types of air cleaners are as follows:

Dry Type:

- Remove air cleaner cover and element.
- Gently shake and tap pleated paper type element to remove loose dust and dirt, or blow out dust with air hose holding nozzle at least 2 inches from inside of element.



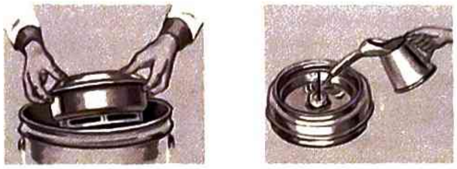
Gently tap paper element on flat table top

- Wipe housing with lintless cloth.
- Reinstall element and cover.
- Replace element at interval shown on chart.

Oil Bath Type:

1. Remove air cleaner from carburetor carefully to avoid spilling oil. Remove element.
2. Wash filter element in kerosine or solvent.
3. Shake element to remove surplus kerosine or solvent. Allow element to dry.
4. Remove old oil and sediment from reservoir; wipe with clean lintless cloth.
5. Refill reservoir to level mark with fresh motor oil as specified on chart.
6. Reassemble cleaner and wipe unit clean.
7. Replace air cleaner on carburetor.

Some 'Jeep' models have an oil bath air cleaner serviced by loosening a clamp securing the lower oil cup to the cleaner body. Remove and empty the oil cup, wash with solvent, refill with crankcase grade motor oil to oil level bead, replace cup on cleaner body, and secure with clamp.

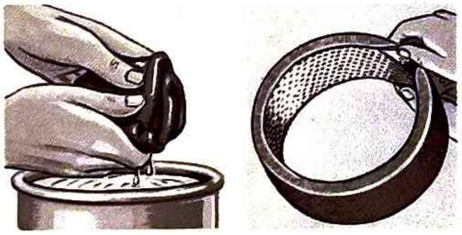


Wash element, let air dry. Refill reservoir to level mark

Polyurethane, Oil-Wetted Type:

Most car manufacturers recommend the following procedure for servicing, but Cadillac specifies replacement of element if there is evidence of dust leakage at element edges.

1. Remove element from air cleaner housing.
2. Carefully remove element from mesh support.
3. Wash element in solvent.
4. Squeeze out surplus solvent. Do not wring (element may tear).



The polyurethane element must be serviced with care

5. Dip element in SAE 10W motor oil. Squeeze element gently to distribute oil and remove excess.
6. Carefully reinstall element on mesh support.
7. Clean air cleaner housing and replace element.

Wire Gauze, Oil-Wetted Type:

1. Remove air cleaner from carburetor.
2. Remove air cleaner cover and element. Cover and element are not separable on some types.
3. Wash element in kerosine or solvent.
4. Shake element to remove surplus cleaner. Allow element to dry.
5. Reoil element with motor oil specified on chart. Drain off excess oil.
6. Clean inside of air cleaner shell with lintless cloth.
7. Replace air cleaner element and cover.
8. Wipe air cleaner assembly and replace on carburetor.

carburetor choke shaft

Late model Chrysler-built cars require periodic cleaning of the automatic choke, as follows:

1. Remove carburetor air cleaner.
2. Apply carburetor cleaner into opening in carburetor around choke piston link and to each side of choke shaft.
3. Rotate shaft repeatedly to work gum from treated surfaces.

choke housing vent filter

Buicks with a water-heated automatic choke require periodic washing of the vent filter in solvent. To remove the filter, unsnap spring retaining clip. After cleaning, do not oil filter.

carburetor air duct valve

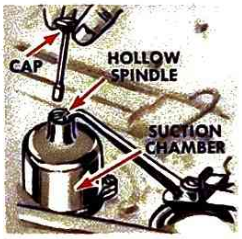
Some cars have a duct permitting the carburetor to draw cool air from in front of the radiator, or warm air from around the exhaust manifold. A thermostatically-controlled air valve regulates air temperature to suit engine needs. Lubricate when the air cleaner is serviced as follows:

- Lubricate each end of shaft with mixture of graphite and kerosine or special solvent for manifold heat control valves.
- Rotate shaft to work lubricant into bushings.

carburetor dashpot

Carburetors used on some imported cars are equipped with a dashpot which must have a correct lubricant level for efficient engine acceleration. To service the dashpot:

- Wipe dirt off and unscrew cap on top of carburetor.



S.U. carburetor dashpot

- Add recommended grade of motor oil to suction chamber to a level slightly below full.
- Replace and tighten plug.

turbo-chargers and superchargers

Automotive turbo-chargers and superchargers are designed to provide increased power output by pumping the air/fuel mixture into the engine.

Oldsmobile Turbo-Rocket:

The Oldsmobile Turbo-Rocket engine uses an anti-detonant fluid injected into the air/fuel mixture. The fluid is a combination of distilled water, alcohol and corrosion inhibitors. Only recommended fluid, available at Oldsmobile dealers, should be used. The fluid reservoir is mounted at the left front of the engine compartment. A spare jar of fluid is also contained under the hood. When the reservoir supply drops to approximately 1 quart, a safety light on the console goes on, warning the driver.

Operation of the car without fluid does not damage the engine, but results in definite loss of performance.

Studebaker Supercharger:

The 1963-64 supercharger has a self-contained lubrication system. The oil sump holds 8 ounces of Automatic Transmission Fluid, Type A, which should be maintained at the "Safe Operating" level on the dipstick. Drain and refill supercharger at interval shown on individual chart.

crankcase ventilation

The function of a crankcase ventilation system is to remove "blow-by" gases which pass the piston rings, as well as condensation vapors and fumes from the crankcase. Permitted to remain, these contaminants produce sludge and varnish in the motor oil which interfere with proper engine operation. They also allow rust formation, and develop highly corrosive acids that etch polished engine surfaces, reducing engine life.

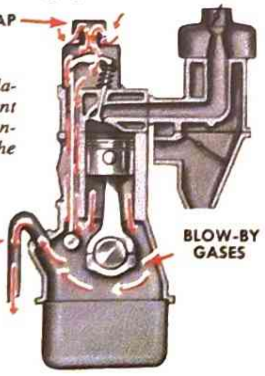
Oil Fill Cap:

The engine oil fill cap also serves as a breather unit for some crankcase ventilation systems. It generally contains a wire mesh filter to cleanse air entering the system. Since proper crankcase ventilation is dependent on the correct amount of clean air entering the crankcase, the oil fill cap must be serviced at the interval specified on the chart.

- Wash cap in solvent.
- Shake out excess cleaning fluid and allow to dry.
- Oil wire gauze with oil recommended for crankcase. (Some manufacturers recommend leaving the wire gauze dry. The charts will specify such exceptions.)

Conventional Ventilation System:

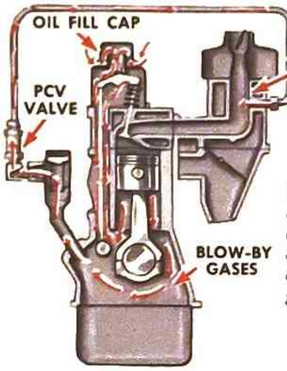
The conventional ventilating system on most cars prior to 1963 utilizes forward motion to develop a low-pressure area at the lower end of the road draft tube from which crankcase fumes are exhausted. This induces air to enter the oil fill cap, pass into the crankcase to pick up gases and fumes, and carry them into the atmosphere through the draft tube.



The conventional ventilation system is dependent on vehicle motion to induce air flow through the crankcase

PCV System (Positive Crankcase Ventilation):

Positive Crankcase Ventilation systems, as their name implies, provide a means of pulling blow-by gases from the crankcase whether the car is standing or moving. Additionally, PCV systems route blow-by gases back through the engine, where they are partially consumed. This action helps reduce atmospheric contamination and smog.



The PCV system uses engine vacuum to create a positive flow of air through the crankcase at all engine speeds

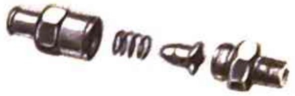
PCV systems may be classified as *open* or *closed* types.

In an open system, fresh air is drawn in (usually through the oil fill cap) and circulated inside the engine. The air picks up crankcase fumes and condensation, then is carried by hose to the intake manifold. Flow rate is controlled either by a metering valve or an orifice, the location of which is shown on individual charts in this Guide. System parts requiring service are the metering device, the hose, and the entering air filter.

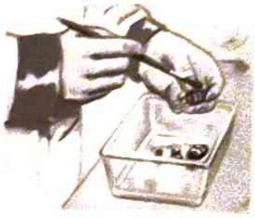
A closed PCV system differs from the open type in having an unvented oil fill cap, as well as a second hose which connects the crankcase to the carburetor air cleaner. This hose has two functions: (1) it allows air from the air cleaner to be drawn into and circulate through the engine; (2) if blow-by gas volume is greater than the capacity of the metering device, gases can back-up, pass through the hose to the air cleaner, and be burned in the engine. Because the oil fill cap is sealed, the gases cannot escape.

Various types of valves are used with each system, but their service requirements are essentially the same. Some valves can be disassembled for cleaning, while others must be replaced; proper procedure is given on each individual chart.

To help in checking for proper PCV system operation, many testers have been developed. Some measure the actual amount of air flowing in the system; others indicate only if there is vacuum created in the crankcase.



A disassembled PCV valve



Soak the valve parts in solvent and gently clean them with a brush

A simple way to check an open type of system is to observe the area around the oil fill cap. If it is covered by an excessive amount of oil, the system is not working properly. Test for air flow with engine idling by removing the oil fill cap and placing a hand or piece of paper over the oil fill tube; lack of suction indicates improper operation.

Another indication of a need for PCV valve maintenance is rough engine idle (a plugged system affects the fuel/air ratio). The most direct test method for an open system using a jiggle-pin type of valve is to remove the valve and shake it to see if the pin is free.

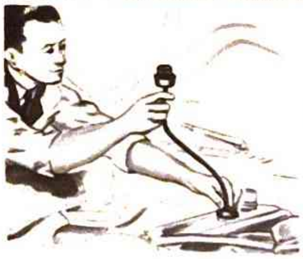
Service open systems as follows, at intervals specified on chart.

- Remove valve, wash or replace.
- Remove and blow out hose.
- Wash oil fill cap or air inlet breather. Dry and oil.

Testing a closed system is somewhat more difficult because it is necessary, first, to disconnect the hose attached to the air cleaner. Then, with the engine idling, use your hand or a piece of paper to see if a vacuum is drawing air into the crankcase. (If a PCV tester is used, it may only be necessary to pinch the hose momentarily, rather than disconnect it.)

In servicing the closed type PCV system, either a filter or a wire-screen flame arrester will be found at one end of the hose attached to the air cleaner. Proceed as follows, according to intervals specified on the chart.

- Remove valve; wash or replace.
- Remove hose and blow out.
- Wash air inlet filter or flame arrester.



The AC tester is simple to use and is color-coded to quickly indicate the condition of the PCV system

distributor

Distributors should not be overlubricated. Wipe excess lubricant from all parts.

Distributor Shaft:

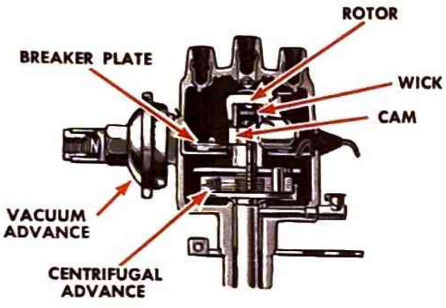
Distributor shaft lubrication varies with distributor design as follows:

OIL CUP —

- Put four or five drops of SAE 20,20W motor oil or grade specified on chart into cup.

GREASE CUP —

- Tighten grease cup one or two turns.
- Remove cup if tight.
- Refill with lubricant recommended on chart.
- Replace cup and tighten about two turns.



Sectional view of typical distributor

LUBRICANT FITTING —

- Clean fitting.
- Apply recommended lubricant from low-pressure lubrication gun.
- Release gun trigger when lubricant appears at vent.

PLUG —

- Clean and remove plug from fill hole.
- Fill hole level full, using hand oiler.
- Use SAE 20,20W motor oil or grade recommended on chart.
- Replace plug.

Internal Components:

WICK UNDER ROTOR —

A wick inserted into top of hollow distributor shaft carries lubricant to the automatic spark advance mechanism. To lubricate:

- Wipe off and remove distributor cap and rotor.
- Put two or three drops of motor oil directly onto felt wick. Use SAE 20,20W motor oil or grade recommended on chart.
- Replace rotor and distributor cap.

FELT UNDER BREAKER PLATE —

Lubrication chart will specify oil to use when felt is provided. Use hand oiler to wet pad in one of two ways:

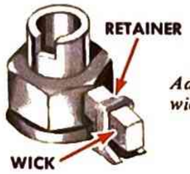
- Apply three or four drops of motor oil through oil hole in breaker plate, or
- Apply one drop of oil at each of four different places around outside edge of breaker plate.

DISTRIBUTOR CAM —

Coat cam with a light film of high-temperature cam lubricant if dry to the touch.

CAM LUBRICATOR —

Some distributors have a felt wick for lubrication of the breaker cam; apply only one or two drops of motor oil. A permanently lubricated wick is used on some distributors; do not add lubricant to these wicks. If wick is round, periodically rotate it; if oblong, squeeze retainer and wick from the breaker plate and reinstall so the opposite end of the wick just touches the breaker cam.



Adjust lubricator squarely with wick just touching lobe of cam

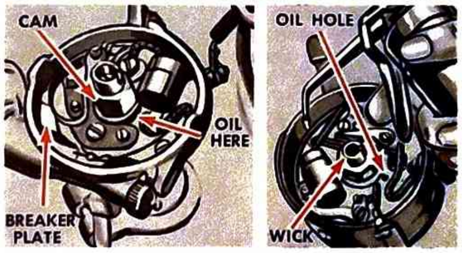
BREAKER ARM PIVOT —

Lubrication is required every 5,000 miles or when breaker point is replaced.

- Lubricate with one drop of oil.
- Wipe top of pivot.

Lucas Distributors:

Lubrication is similar to other distributors except the lubrication point under the rotor does not have a felt wick. Lubricate the advance mechanism through the space between breaker plate and distributor cam.



Lucas distributor *Delco distributor*

fuel filter

Fuel filtering elements in sediment bowls attached to the fuel pump should be serviced as specified on the chart.

- Remove bowl, wash in solvent.
- Clean or replace element as indicated on chart.
- Reassemble filter using new gaskets.
- Idle engine, check for fuel leaks.

In-line disposable type filters, mounted in the fuel line, are being used on most new cars. Change this type filter at intervals shown on the chart.

generator

Generators are lubricated with motor oil applied through oil cups or covered oil holes. Clean the oil cup or oil hole before lubricating. Add only three or four drops of oil at each point. Use SAE 20,20W motor oil unless other grade is shown on chart. Some generators are sealed and prelubricated, as are alternator bearings, and neither require periodic lubrication.

manifold heat control valve

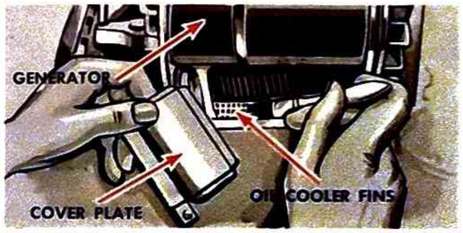
The manifold heat control valve is serviced by lubricating shaft ends extending outside the manifold.

- Lubricate shaft ends with mixture of graphite and kerosine or special solvent for heat control valves.
- Rotate shaft to free valve and work lubricant into bushings.
- If shaft will not rotate, tap both ends lightly with hammer until valve is free.

oil cooler

Chevrolet Corvair oil cooler must be cleaned at intervals shown on the chart.

- Remove oil cooler cover plate.
- Brush dirt and lint away from oil cooler fins.



Chevrolet Corvair oil cooler

- Use air gun to blow through fins from underside.
- Replace cover plate.

oil filter

Change filter when changing crankcase oil. Service intervals are given on each chart.

Replaceable Element Type:

Change element at intervals specified on chart as follows:

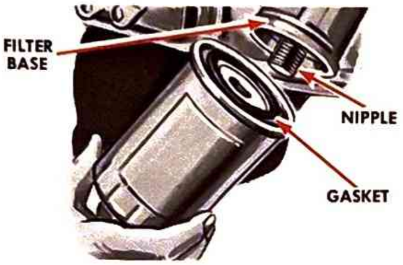
1. Remove oil filter cover.
2. Remove drain plug from bottom of filter housing, when provided.
3. Lift out element.
4. Remove old oil with siphon gun if filter has no drain.
5. Use lintless cloth to clean inside of filter housing.
6. Reinstall drain plug if previously removed.
7. Install new element and gasket; replace cover.
8. Start engine; check oil pressure; check for leaks around filter cover.
9. Check crankcase oil level. Generally, one extra quart of motor oil is needed to bring crankcase level to full mark on dipstick after filter element replacement.

Screw-on Type:

This filter type can be easily removed or installed using a strap-type tool, or by using a box end wrench on those filters that have a nut-like projection stamped into the bottom of the housing.

To replace filter, proceed as follows:

- Unscrew housing and discard complete unit.
- Wipe gasket area on filter base.



Screw-on type oil filter

- Place new gasket in retaining groove on new filter.
- Coat gasket with motor oil.
- Install new filter. Hand tighten until gasket surface contacts mounting base. Then tighten filter an additional ½, ⅔, or full turn as specified in the instructions stamped on the filter housing or printed on the container.
- Start engine; check oil pressure; check for leaks around mounting base. Stop engine.
- Check crankcase oil level. Generally, one extra quart of motor oil is needed to bring crankcase level to full mark on dipstick after filter element replacement.

The Mercedes-Benz oil filter has a replacable paper element and a wire strainer. Wash strainer and replace element at intervals shown on chart.

starting motor

Most modern starting motor bearings need no lubrication. Starting motors requiring lubrication will be equipped with an oil cup or oil hole.

- Wipe oil cup or oil hole.
- Use two or three drops of SAE 20,20W motor oil or grade specified on chart.

steering

Gear Housing:

Steering gear housing while not an engine accessory is serviced from under the hood as follows:

- Clean dirt from plug.
- Remove plug. Fill housing to level of fill hole with lubricant recommended on chart. Housings without plugs are filled by removing a cover attaching cap screw. Some are filled through the plug hole to the level of an attaching screw hole.
- Replace plug.

Late model Hillman Minx and Husky cars have an unusual steering gear with two fittings. Apply gear lubricant specified on chart while steering gear is turned fully to the right.

Rack and pinion steering gears generally require gear oil applied through a lubrication fitting. The correct lubricant is shown on the chart.

Some power steering gear housings are not serviced externally. Refer to chart for specific information.

Power Steering Reservoir:

Service power steering reservoir as follows:

- Clean around reservoir cover or fill cap. Remove cap or cover.
- Check fluid level; proper level is given on chart.
- Add recommended fluid to proper level.
- Replace fill cap or cover.

If filter replacement is required, remove all fluid from reservoir with a suction gun. Lift out old filter and thoroughly clean reservoir with a lint-free cloth before installing new filter.

CHASSIS INSPECTION AND LUBRICATION

inspection

Safety, performance, reliability: things every car owner wants when he brings his car in for service. He orders those services that he knows are due. He also expects the serviceman to check for other potential troubles.

lifting procedures

Use caution when positioning a car on a lift. Many cars require special adapters to support the car frame properly when a frame-engaging type lift is used. Be sure the correct adapter is selected and properly positioned as indicated on the chart. This will prevent injury to personnel and damage to the car. Always keep car doors closed while on the lift.

Special instructions on the chart should be followed when given.

lubrication procedures

Lubrication fittings are shown on the chart by black dots. On truck charts, fittings that do not appear on all models are indicated by a black circle "O" symbol. Prepacked bearings requiring inspection or service are indicated by black triangles.

Complete Chassis Lubrication:

For complete chassis lubrication, consult the applicable chart in this Guide for the location of every lubrication point, lubricant to be applied, and the interval at which service should be performed. Also listed is important service information for automatic transmission, wheel bearings, positive crankcase ventilating systems and other critical service points.

To double the value of your lubrication service and increase your profits from additional TBA sales and services, follow the safety inspection procedure outlined on the pages titled "Your Steps to Car Safety." Car safety inspection can well be one of your most important and profitable efforts.

Lubrication Gun Adapters:

Use adapters to service hard-to-reach points like tie rod ends, control arms, and other fittings that cannot be reached in a straight line with a standard gun. Pressure relief adapters dispense lubricant at lower pressure. Instances where the manufacturer specifies low pressure are shown on the chart. High pressure on these fittings may rupture seals or gaskets or cause other damage.

Ball Joint Lubrication:

When lubricating front suspension ball joints, the car must be lifted so that ball joints are unloaded and the lubricant can effectively enter the joints. Design of front suspension dictates where jack or lift should be placed.

When the front coil spring is mounted between upper and lower control arms, support must be placed under the lower control arm as close to the wheel as possible. This can be done by use of a floor jack or by placing a heavy plank across the rails of a rail-type lift to properly support lower control arms. A small hand-operated jack can be used on the rails of a drive-on type lift.

The use of a floor jack will unload the ball joints

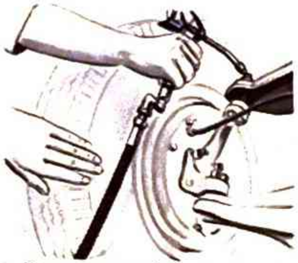
A sturdy plank placed across the lift rails will properly support the lower control arms

When the coil spring is mounted above the upper control arm (for example, Ford Falcon, Chevy II), the vehicle must be lifted by the frame to properly unload joints. Normal use of the standard frame-contact lift, along with proper adapters, will satisfy this requirement.

Ball Joint Lubrication Procedure:

Follow this procedure for lubricating ball joints equipped with standard fittings.

- Lift front of car by lower control arm or frame, as previously explained, to unload ball joints.
- Wipe fittings clean, apply lubricant intermittently.
- Turn wheels from side-to-side to distribute lubricant in joints.



Apply lubricant to ball joint while turning wheels from side-to-side

- Repeat procedure at other front wheel.

Note: Up-and-down movement of tire and wheel assembly as lubricant is applied is evidence that ball joints are separating by the forceful entrance of lubricant and does not indicate worn parts.

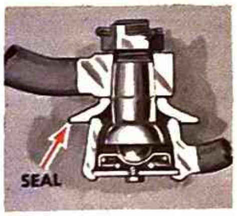
- Lower car to floor. Bounce car up-and-down and rock it from side-to-side several times to check for noise. If noise is heard, relubricate joints.

Lack of lubricant at the ball joints produces two distinct types of front end noise. Dry lower ball joints produce a crunching or squeaking noise as the car is slowly bounced up-and-down. Dry upper ball joints produce a snapping or cracking noise as the front end is bounced more forcibly.

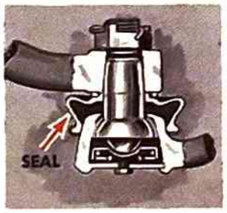
Prepacked Bearings:

Many late model cars have prepacked bearings at front suspension ball joints and/or steering linkage joints. The extended mileage interval at which prepacked bearings are relubricated is made possible by changes in lubricants and the use of better rubber seals. Usually a balloon-type seal is used to replace the former umbrella-type. However, to prevent seal rupture, lubricant must be applied slowly and at low pressure because balloon-type seals do not readily allow excess lubricant to escape.

Prepacked bearings are identified on charts by black triangles.



Umbrella-type



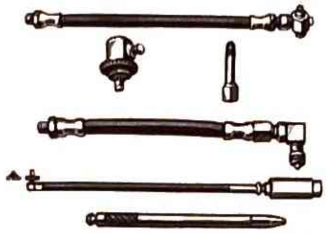
Balloon-type

Recommended prepacked bearing service and special lubricant to be used are listed on applicable charts.

Inspection:

When a car with prepacked bearings is on the lift, bearing seals should be inspected for physical damage: tears, ruptures or worn spots. Damaged seals should be replaced. Also make sure that the screw-in metal plug or press-in plastic plug is in place on every bearing.

Relubrication of prepacked bearings requires use of special lubrication adapters. Typical adapters are illustrated below.

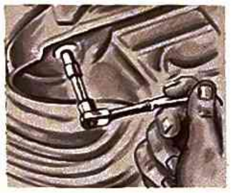


Prepacked bearing lubrication adapters

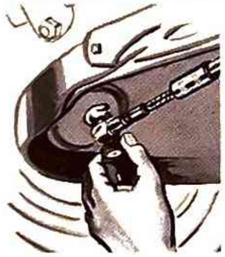
Lubrication:

Prepacked bearings should be repacked at the interval specified on the chart or sooner if the need for lubricant is evident or seals have been damaged permitting loss of lubricant and entrance of dirt.

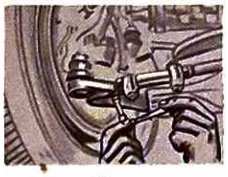
Follow this procedure for relubricating prepacked ball joints and steering linkage joints:



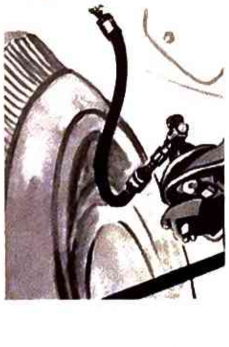
- Unscrew metal plug or pry out and discard plastic plug.



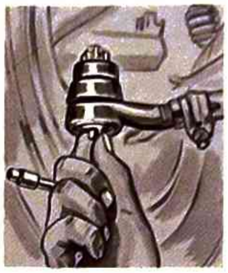
- Screw lubrication adapter into, or press rubber tip of adapter or special hand gun into, the plug hole in the bearing and apply recommended lubricant until it is visible around seal or until seal is filled.



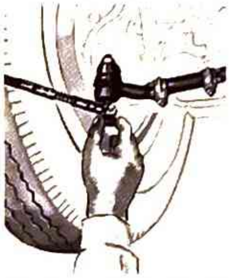
- Install and tighten metal plug or press in new plastic plug.



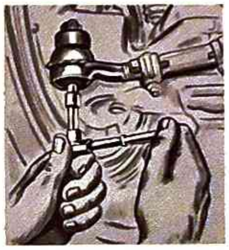
- Upper ball joint is serviced in the same manner as the lower joint: remove plug, lubricate, replace plug.



- Unscrew metal plug or pry out and discard plastic plug from steering linkage joint.



- Screw lubrication adapter into, or press rubber tip of adapter into lubrication hole and apply lubricant until it is visible around seal or until seal is filled.



- Replace and tighten metal plug or press in new plastic plug.

When prepacked bearings are constructed without a provision for relubrication, the ball joint or steering linkage joint must be replaced if the joint is dry, worn or the seal is damaged.

battery maintenance

Check battery condition during each chassis lubrication.

- Check electrolyte level. Add pure water to bring level to ⅜ inch above top of plates.
- Clean dirty battery top with ammonia water or baking soda solution, rinse and wipe dry.
- Check cable connections and hold down. Tighten if necessary.

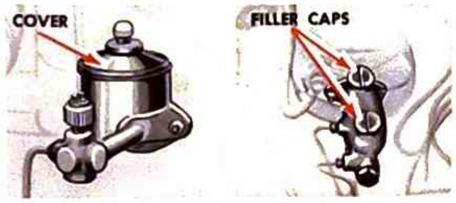
BRAKE SERVICE

brake master cylinder

Brake master cylinders mounted on the firewall are serviced from under the hood. Others, mounted on the frame under the vehicle, may be serviced through an access hole in the floor. To service:

- Clean area around fill plug or cover to keep dirt out of reservoir.
- Remove plug or cover, make certain vent hole is open. Some General Motors cars have a combination gasket and seal on the cover. Do not puncture this seal.
- Check fluid level. Fill to within ½ inch of top of reservoir with recommended fluid unless otherwise specified.
- Replace gasket and fill plug or cover.

SERVICE INSTRUCTIONS



Single and dual master cylinders

parking brake cables

The covered control cable must be removed and recoated with lubricant as follows:

1. Remove rear wheels and brake drums.
2. Disconnect cable from equalizer assembly.
3. Clean exposed section of cable before detaching cable ends from parking brake lever in each brake assembly.
4. Pull cable part way through flexible conduit to expose portion of cable normally inside conduit.
5. Work lubricant into cable strands. Wipe off excess.
6. Slide cable back into conduit.
7. Reattach cable end to brake lever in each brake assembly.
8. Reconnect cable to equalizer assembly.
9. Replace brake drums and wheels.
10. Adjust parking brakes.

Disassembly is not required if cables have lubrication fittings, but apply lubricant sparingly.

self-adjusting mechanism

If this mechanism is malfunctioning (brake pedal is soft, or only one brake works and car pulls), remove wheels and brake drums and lightly lubricate the star wheel and its screw threads. Also, lightly coat each contact point between brake shoes and backing plates with lubricant.

power brake systems

The air cleaner should be washed in solvent and dried, or replaced, periodically. Maintain brake fluid level in reservoir as specified on chart.

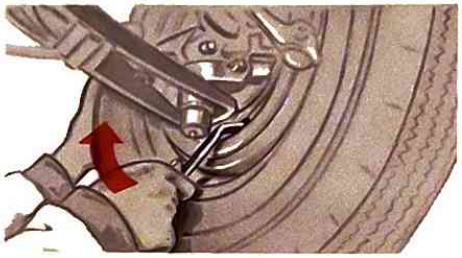
The vacuum cylinder of Hydrovac truck power brake units requires the following service:

- Clean and remove pipe plug from air inlet end of cylinder.
- Add oil to level of fill hole as specified on chart.
- Replace pipe plug.
- Inspect, clean with solvent and reoil Hydrovac air cleaner.

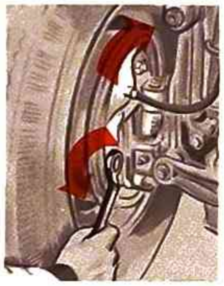
brake adjustment

Minor brake adjustment is the service that compensates for gradual wear of brake lining.

Before starting brake adjustment, make sure no brake drum drag exists. This could be caused by a loose backing plate, an out-of-round drum, dry, defective or improperly adjusted wheel bearings, or defects within the brake assembly (broken brake shoe hold-down springs, broken or stretched brake shoe return springs or dragging parking brakes). These conditions must be corrected before proceeding with brake adjustment as outlined on the chart. Cars with self-adjusting brakes require manual adjustment only when relining brakes or if malfunction occurs. Disc-type brakes are also self-adjusting.



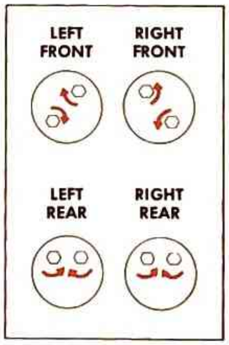
Bendix and Wagner brakes are tightened by pushing up on the handle of the adjusting tool



Lockheed single-cylinder brakes are tightened by turning the adjusting cams outward

Center-Plane brakes are used on:

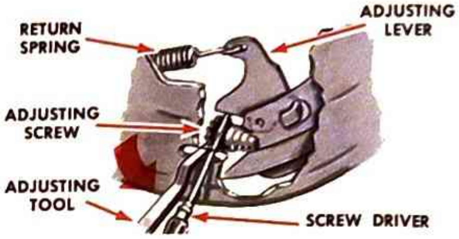
Chrysler	*1956-62*
DeSoto	*1956-61*
Dodge	*Some 1956*
Dodge	*1957-61* *ex. Lancer*
Dodge	*1962 880*
Imperial	*1957-62*
Plymouth	*1957-61* *ex. Valiant*



To tighten, turn adjusting cams as indicated. Cams are shown as they appear from under car

When most self-adjusting drum brakes require manual adjustment, as after shoe replacement, adjust as follows:

- Expand shoes in normal manner until a slight drag is felt as wheel is turned.
- Insert a thin blade screw driver or ice pick through adjusting slot and push adjusting lever away from adjusting screw.
- Back off brake adjustment until drum turns freely without drag.
- Operate car in reverse and apply brakes several times to finalize adjustment.



Self-adjusting brakes are loosened by pushing down on the adjusting tool while relieving the adjusting lever tension

Some self-adjusting brakes require a special procedure, as shown on the chart.

To adjust parking brakes:

- Release parking brakes.
- Check cable slack at center of cable. Normal slack is about 2 inches of movement.
- Adjust cable, as required, with adjusting nut at equalizer bar.

Note: If cable action is sluggish due to rust between cable and conduit, remove rust and lubricate cables.

brake bleeding

Brake adjustment will not provide efficient braking if air has entered the hydraulic system. Presence of air is indicated by a "spongy" feeling of the brake pedal when brakes are applied. Air must be removed from the system by a process called "brake bleeding". To accomplish this operation thoroughly and quickly, the wheel cylinders, including those on disc brakes, should be bled in the order listed under Bleeding Sequence. This sequence also includes power brake, master cylinder or hill-holder when applicable.

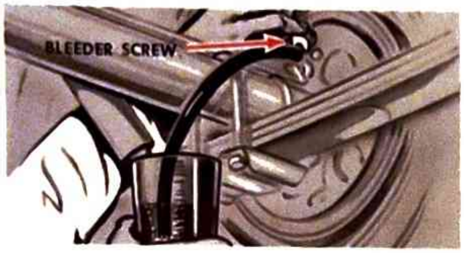
Use of a brake pressure tank permits a one-man bleeding operation. In its absence, the system can be bled by two men, one slowly operating the brake pedal and keeping the master cylinder filled with brake fluid while the other bleeds wheel cylinders.

Some late model cars have a dual master cylinder containing two fluid reservoirs. Each reservoir may have its own fill cap or a single common cover may be used. Fluid from one reservoir is used for front brakes; fluid from the other for the rear brakes. BE SURE to keep both reservoirs filled with fluid during the bleeding operation.

Brake bleeding for most systems is done in this manner:

1. Clean top of brake master cylinder, remove fill plug(s) and fill cylinder(s) with heavy-duty brake fluid.
2. Remove dust cap from bleeder screw of wheel cylinder that is first in bleeding sequence and screw fitting of bleeder hose into dust cap hole.
3. Place lower end of bleeder hose in glass jar partly filled with brake fluid. Keep end of hose submerged in fluid at all times during bleeding operation to prevent air from being drawn back into wheel cylinder.

4. Loosen bleeder screw about ¾ turn. With pressure applied to brake pedal, fluid will flow into glass jar, taking with it air trapped in brake line and wheel cylinder. Close bleeder screw and release brake pedal. Continue bleeding until fluid flows in a solid stream without air bubbles.



Bleeding the hydraulic brake system

5. Securely tighten bleeder screw, remove bleeder hose and replace dust cap.
6. Refill master cylinder.
7. Repeat bleeding operation at each wheel in recommended sequence. Refill master cylinder after each wheel cylinder is bled.
8. Refill master cylinder to level specified on chart.

Note: Neglect in keeping the master cylinder filled during the bleeding operation will permit air to be pumped into the brake system making it necessary to rebleed the entire system.

NEVER re-use fluid removed from a brake system. This fluid contains contaminants.

If fluid removed from a brake system during bleeding is discolored, bleed the entire system until it is completely flushed with clean fresh fluid. Approximately 1 quart of fluid is needed to flush most systems.

Chrysler Corporation recommends a complete disassembly and overhaul of the brake system when inspection of fluid reveals contamination.

Hydraulic brake system flushing fluids are available for cleaning the brake system. Follow manufacturers' recommendations for their use.

POWER TRAIN

clutch master cylinder

The clutch master cylinder is used predominately on imported cars and on some models of U.S.-built trucks. The unit is serviced in the same manner as the brake master cylinder with the same fluid.

clutch release bearing

A fitting or plug may be provided at the clutch release bearing service point. If a plug, replace with fitting; lubricate, then replace plug.

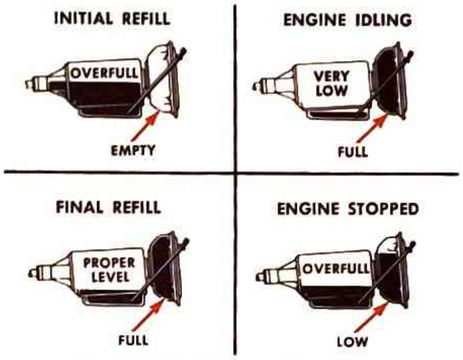
- Remove plate or lower cover of flywheel to expose service point.
- Wipe plug or fitting clean.
- Lubricate sparingly at low pressure.
- Wipe off excess lubricant; replace temporary fitting, if used, with original plug.
- Replace plate or cover.

transmission

Check transmission lubricant level each time the chassis is lubricated. The recommended mileage drain interval is shown on the chart. Drain and refill regardless of mileage if grade of lubricant does not match that recommended for anticipated temperature conditions.

Automatic:

Automatic transmission lubrication service usually includes the transmission and the converter or the fluid coupling. Each must be drained separately but both are filled through the transmission. Operation of the engine for a short period of time pumps fluid from the transmission into the converter or fluid coupling. The fluid level can be checked accurately with the dipstick only when the converter is completely filled. A false fluid level will be indicated unless the check is made while the engine is running or immediately after being stopped.



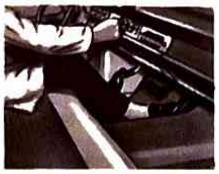
How fluid level changes when refilling

Before draining and refilling an automatic transmission, ask owner if the transmission is operating properly. Merely changing fluid will not fix a faulty transmission. If the bands need adjusting, this work should be done only by qualified personnel.

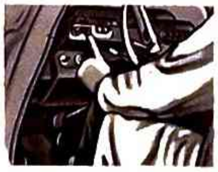
The drain intervals specified on the charts are for normal service. If the car is subjected to continuous stop-and-start or high-speed heavy hauling operation where the fluid temperature is raised considerably above normal, change fluid more often.

General procedures of servicing automatic transmissions are as follows:

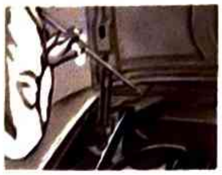
Level Check Procedures:



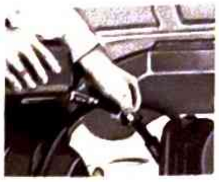
- Start engine
- Set parking brake
- Idle engine



- Allow fluid to warm
- Place selector in range specified on chart

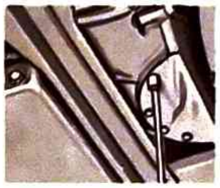


- Clean and remove dipstick, wipe clean
- Check level, engine idling

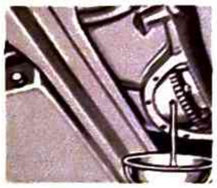


- Add fluid as required
- Replace dipstick, recheck level
- Stop engine

Drain and Refill Procedures:

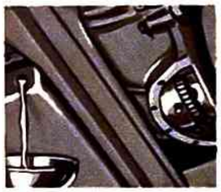


- Warm fluid. Raise car on lift
- Remove flywheel lower housing or cover

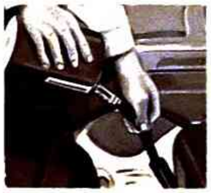


- Turn flywheel until plug is at bottom
- Remove plug to drain. Use 6-point socket

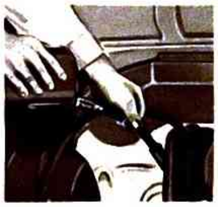
Refer to chart to determine if second plug must be removed to vent converter. Turn flywheel until second plug is at bottom and remove.



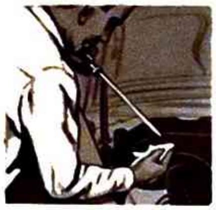
- Remove oil fill pipe, drain plug or entire pan as chart shows
- Replace after draining



- Pour in initial refill quantity specified on chart
- Start engine



- Pour in remaining amount fluid (total refill), engine idling
- While adding final



quart, check level frequently
- Fill only to FULL mark, don't overfill

CAUTION: To tow a car equipped with an automatic transmission:

- Transmission has failed or is damaged and car must be towed for long distance: tow with rear wheels off ground or disconnect drive shaft. Several manufacturers caution against *ever* towing except by one or the other or both of these methods.
- Towing for short distance (for other reasons than transmission failure or damage): place selector in neutral and tow only at speeds under 25 mph.

Manual:

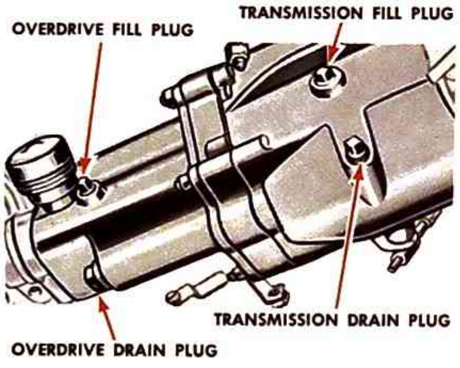
Remove transmission fill plug to check level. Add lubricant, if necessary, to bring level to lower edge of fill plug hole. Change lubricant depending on mileage or temperature as shown on chart:

- Clean area around drain and fill plug. Remove both plugs while oil is warm.
- Replace drain plug after oil has drained.
- Fill to bottom of fill plug hole. Use lubricant specified on chart. Replace fill plug.

Some transmissions have a dipstick in place of fill and level plug. Fill through dipstick hole to level shown on dipstick.

Overdrive:

Remove fill plug to check level. Add lubricant specified on chart, if necessary. Follow drain and refill procedures for manual transmission. Allow time for lubricant to flow from transmission into overdrive, when chart specifies overdrive unit is to be filled through transmission. Operate engine in neutral for a few minutes, then check level.



Manual transmission and overdrive service plugs

Imported cars equipped with a Laycock de Normanville overdrive have a filter screen that must be serviced when draining the unit. The filter screen, held by a center bolt, is seen when the drain plug is removed.

- Remove center bolt and filter screen.
- Wash screen in kerosine or solvent. Shake off excess cleaner.
- Reinstall screen and center bolt.

differential

Level Check Procedures:

Check lubricant level each time chassis is lubricated. Refer to the chart for recommended drain intervals.

To Check Level:

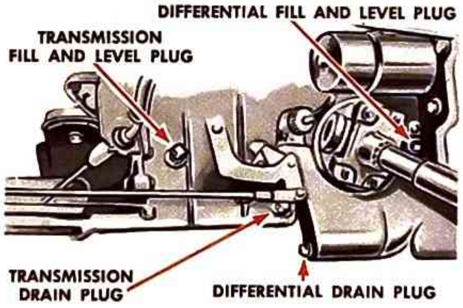
- Remove fill plug.
- Add lubricant specified on chart. Level usually is raised to bottom of fill plug hole. Be sure level is correctly checked; it may appear the lubricant level is high or low when the car is raised on a frame-engaging lift depending on location of the level plug. This is caused by the drop of the rear axle which repositions lubricant level.
- Check axle housing vent. Be sure vent is open.

Changing Lubricant:

Refer to the chart to determine if change and refill of lubricant is recommended. The differential should be drained after the car has been driven, while oil is warm. Do not use air pressure to speed up draining. Some differentials do not have a drain plug, so drain by removing the lowest cap screw in the housing cover or differential carrier. Use a siphon gun if a nut is used instead of a cap screw. Refill to bring level to bottom of fill plug hole or as recommended on the chart.

transaxle

Chevrolet Corvair, early Pontiac Tempest and several imported cars have transmission and differential housings bolted into a single unit called a transaxle.


DIFFERENTIAL FILL AND LEVEL PLUG
TRANSMISSION FILL AND LEVEL PLUG
TRANSMISSION DRAIN PLUG
DIFFERENTIAL DRAIN PLUG

Corvair transaxle

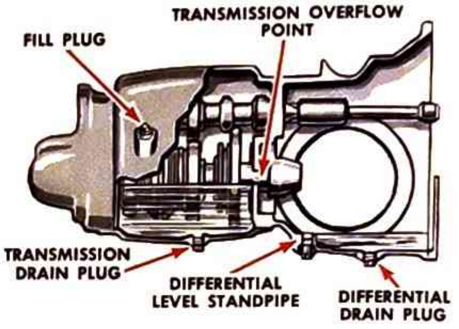
When a manual transmission is part of the transaxle, the transmission/differential lubricant can flow from one housing to the other. Only one lubricant level plug is needed: if lubricant level is correct in one housing, it is correct in both.

Chevrolet Corvair, however, is equipped with separate plugs in each housing so:

- Check the lubricant level in the differential housing. If the level is correct, the transmission lubricant level will be satisfactory.
- If differential lubricant level is low, add required lubricant through transmission fill plug. Correct level is to bottom of fill plug hole.

1964-65 Corvairs also have a differential dipstick accessible in the engine compartment.

Renault 4CV and Dauphine cars have two types of transaxles. The first unit, on cars built up to February, 1959, has an internal standpipe for checking lubricant level in the differential section. This unit is identified by three plugs in the bottom of the assembly. Follow this procedure in checking lubricant level, draining, and refilling this type of transaxle:



Early-type Renault transaxle

Check Level: (Early type)

- Remove level plug at center of axle housing. If lubricant appears, allow excess to drain. If not—
- Add lubricant at fill plug until excess appears at level plug hole.
- Allow excess lubricant to drain; replace plugs.

Drain and Refill:

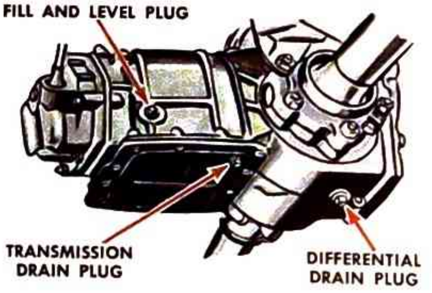
- Remove all four plugs. Allow lubricant to drain completely.
- Replace two drain plugs and add lubricant until excess appears at level plug hole.
- Allow excess lubricant to drain; replace plug.

(Late type)

Late model Renault transaxles have no level check plug in the bottom of the axle housing. Only a drain plug is used.

Check Level:

- Remove fill plug.
- Allow excess lubricant to drain or add lubricant as required. Correct level is at bottom of fill plug hole.



Late-type Renault transaxle

Drain and Refill:

- Remove all three plugs. Allow lubricant to drain completely.
- Replace two drain plugs.
- Add lubricant until excess appears.
- Allow excess lubricant to drain from fill hole.
- Replace fill plug.

universal joint

Ball and Trunnion Type:

Ball and trunnion universal joints must be disassembled and repacked periodically. Recommended lubricant and service intervals are shown on the chart. This service demands a qualified mechanic.

Cross and Yoke Type:

FITTING-EQUIPPED —

- Lubricate through fitting, usually in cross.
- Refer to chart for service interval, recommended lubricant, and whether low pressure is required.

FILL HOLE SEALED WITH SLOTTED PLUG —

- See chart for service interval, recommended lubricant.
- Remove slotted plug. Fill hole is generally located in cross.
- Inject lubricant directly into hole. Use low-pressure gun; apply lubricant slowly, sparingly.
- Replace slotted plug to maintain drive line balance.

CONSTANT VELOCITY UNIVERSAL JOINT —

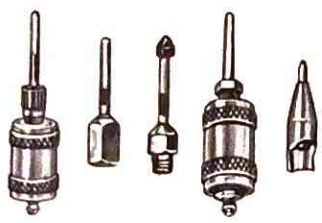
This type of joint may be lubricated through a fitting or may be prepacked at assembly. The centering ball, however, may be lubricated through a flush-type fitting using a special adapter or prepacked at assembly. See chart for lubricant and service interval. On some Buicks, the constant velocity joint is mounted in the frame tunnel and it is necessary to align the flush fittings with the access hole. See procedure and illustration for universal joint spline.

HOUSING ENCLOSED —

No service required; lubricated from transmission.

PREPACKED WITHOUT FITTING OR FILL HOLE —

Requires disassembly and repacking: service easily performed by a mechanic using proper tools and procedures. Service interval and recommended lubricant are shown on chart.



Spline and "U" joint lubrication adapters

universal joint spline

A universal joint spline generally is used with a cross and yoke type universal joint. Some splines are lubricated through a fitting or plug, some by disassembling and coating spline surface, others from the transmission.

Some Buicks with torque tube drive, have a plug covering a lubrication access hole at the rear of the torque tube.

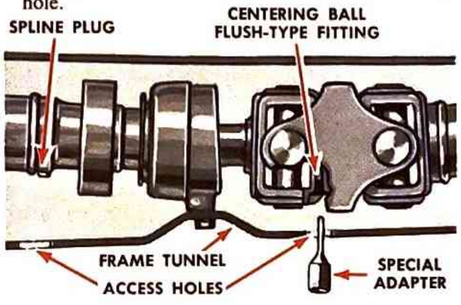
To lubricate spline:

- Remove plug in torque tube.
- Turn rear wheels until fitting on rear universal joint spline aligns with access hole.
- Apply only one ounce of lubricant (*see chart*).
- Replace plug in torque tube.

Buicks with an "X" frame have an open-type drive line passing through a tunnel in the frame. This limits access to the lubrication plug for the spline.

To lubricate spline:

- Turn rear wheels until plug is aligned with access hole.



Buick constant velocity joint and spline

- Remove slotted screw plug.
- Apply lubricant specified on chart with special adapter.
- Replace plug.

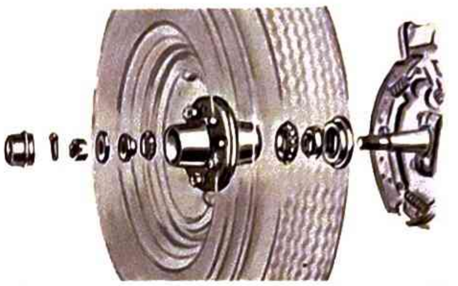
WHEEL BEARING SERVICE TIRE ROTATION

front wheel bearings

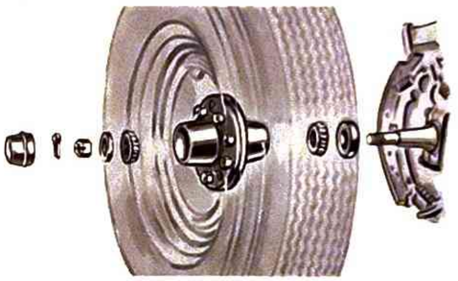
Cleanliness and correct bearing adjustment are two important requirements of front wheel bearing service. Front wheel bearings of domestic cars are generally removed, repacked with lubricant, and reinstalled.

Removing and Lubricating Front Wheel Bearing:

1. Remove hub cap; jack up wheel to clear floor.
2. Remove dust cap, cotter pin, wheel retaining nut and washer.
3. Remove outer bearing parts. Shake wheel slightly to loosen outer bearing. Place parts on clean cloth.
4. Carefully lift wheel hub off spindle. Avoid dragging rear bearing over spindle.
5. Remove grease retainer and inner bearing. Carefully tap bearing parts with hammer and wood dowel to loosen, if necessary.
6. Brush or blow dust and dirt out of brake drum.



Exploded view of front wheel ball bearing assembly



Exploded view of front wheel roller bearing assembly

7. Clean old grease from inside of hub and inner hub cap. Wipe spindle clean.
8. Wash bearing parts, except grease seal, in kerosine or solvent. Dry parts thoroughly. CAUTION: Avoid spinning dry bearing parts if air is used in drying process.
9. Pack bearings by hand or with mechanical packer. Use lubricant recommended on chart.
10. Spread thin layer of lubricant inside hub and on spindle.
11. Reassemble inner bearing and grease retainer in hub. Replace grease retainer if worn or damaged.
12. Place wheel on spindle. Reassemble outer bearing, slotted washer, and wheel retaining nut.

Front Wheel Bearing Adjustment:

Adjustment procedures and torque specifications are listed on each chart.

Front wheel bearings are adjusted by either of two methods:

FEEL AND DRAG METHOD —

- Tighten wheel retaining nut until wheel drags slightly when rotated. Turning wheel also seats bearing.
- Loosen retaining nut $\frac{1}{12}$ turn ($\frac{1}{2}$ hex) for ball bearings or $\frac{1}{6}$ turn (1 hex) for roller bearings, to align nut slot with cotter pin hole in spindle. Wheel should rotate freely.
- Insert new cotter pin through nut and spindle from upper side. Bend one leg over end of spindle. Clip off end of leg if static collector is used in dust cap. Bend other leg over retaining nut. Tap legs lightly to set. Cotter pin must be tight.

TORQUE WRENCH METHOD —

- Make sure wheel retaining nut is running free.
- Tighten with torque wrench to initial torque recommended by car manufacturer (*see chart*).

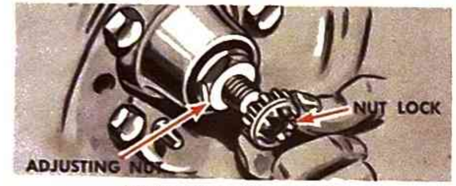
- Loosen retaining nut and retighten to secondary torque, if recommended on chart, OR
- Loosen torque from initial torque position, as shown on chart.

Adjusting bearing with torque wrench

- Insert new cotter pin. If necessary, loosen nut slightly to align cotter pin hole.
- Bend one leg of cotter pin over end of spindle. Clip off end of leg if static collector is used in dust cap. Bend other leg over retaining nut. Tap legs lightly to set. Cotter pin must be tight.

Some late model cars use a separate nut lock in conjunction with the wheel bearing adjustment nut. Adjust as follows:

- Tighten adjusting nut to specified torque.
- Slide nut lock over adjusting nut in a position that aligns the castellations on lock with cotter pin hole in spindle.



Placing nut lock on spindle

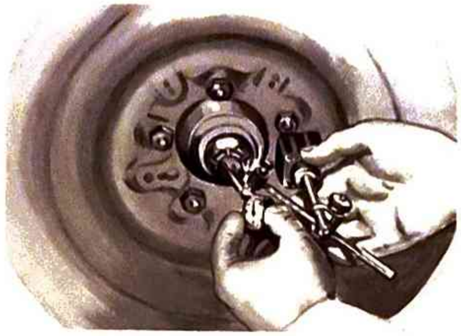
- Back off both adjusting nut and nut lock together until next castellation on nut lock is aligned with cotter pin hole in spindle.
- Install new cotter pin and bend legs of pin around castellated flange of nut lock.

When car manufacturer's adjustment specifications recommend a .003" end play tolerance, for instance, the use of a dial indicator is the only satisfactory method of checking the adjustment.

The dial indicator check is performed as follows:

1. Adjust the wheel bearings in the prescribed manner.
2. Attach the dial indicator block to the wheel.
3. With both hands, push the wheel toward the backing plate.
4. Set the sensing tip of the dial indicator against the outer edge of the spindle.
5. Set the dial on the indicator to zero.
6. Grasp the tire at top and bottom and gently pull on the tire.
7. Check the reading on the dial indicator for the amount of end play present in the bearings.
8. Lock the bearing adjustment or readjust the bearing as required.

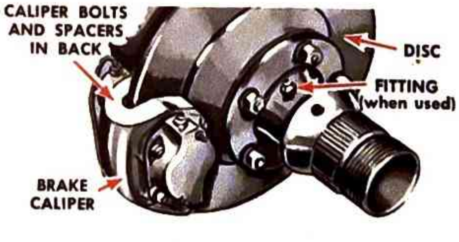
Some imported cars have nonadjustable front wheel bearings with spacers. A puller is usually required to remove the front hub and the bearing from the spindle if the inner bearing or race remains on the spindle.



Set indicator on wheel and sensing tip on spindle end

- Bearings are cleaned, checked and repacked in conventional manner.
- Inner bearing, oil seal, spacer and outer bearing should be inserted in hub when reassembling.
- Use soft metal drift on outer bearing and tap into position.
- Do not back off to line up cotter pin hole when tightening front hub nut.
- Hub nut must be drawn up tight because bearings are not adjustable.

Some cars are equipped with disc brakes and care must be used when repacking wheel bearings. Unbolt and support the disc brake caliper without disconnecting the hydraulic brake lines. Check the number of shims and their position at the caliper mounting points before disassembly. Be sure to replace shims in their original position. Bearings should be disassembled, washed, dried, repacked and adjusted using the same procedure as in servicing drum brakes. Some imported cars have fittings for lubricating front wheel bearings. The Jaguar grease fitting, mounted on the wheel hub, is exposed by removing the front wheel. Grease appearing at a vent hole in the dust cap will indicate when enough grease has been applied on cars with disc wheels. Grease can be seen coming past the outer wheel bearing by looking into the end of the splined hub adapter on cars with wire wheels.

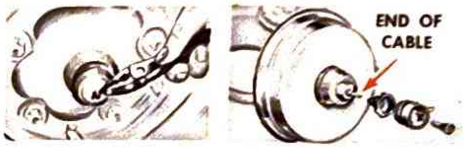


Remove disc brake caliper to repack bearings

The front hub caps must be removed to expose the wheel bearing fitting on some Triumph TR2 models with disc wheels.

Speedometer cables normally do not affect wheel bearing service and are driven from the transmission or transmission extension housing. The Porsche, Volkswagen, 1965 Corvair and some 1963-65 Oldsmobiles, however, drive their speedometers from the left front wheel. The speedometer cable runs through the spindle and is driven by the dust cap which is pressed into the wheel hub in the usual manner.

When performing front wheel bearing service on the Porsche or Volkswagen, the cotter pin which locks the speedometer cable to the dust cap must first be removed. The cable can then be withdrawn or the dust cap pried off. When the service is completed, a new cotter pin should be installed.



Porsche & Volkswagen *Oldsmobile*

Left front wheel speedometer drives

For Corvair and Oldsmobile, carefully pry off the dust cap with a screwdriver and pull the cap straight off the hub to avoid bending the speedometer cable. When reinstalling the dust cap, fit the nylon cap insert over the cable end, then push the cap into its hub.

rear wheel bearings

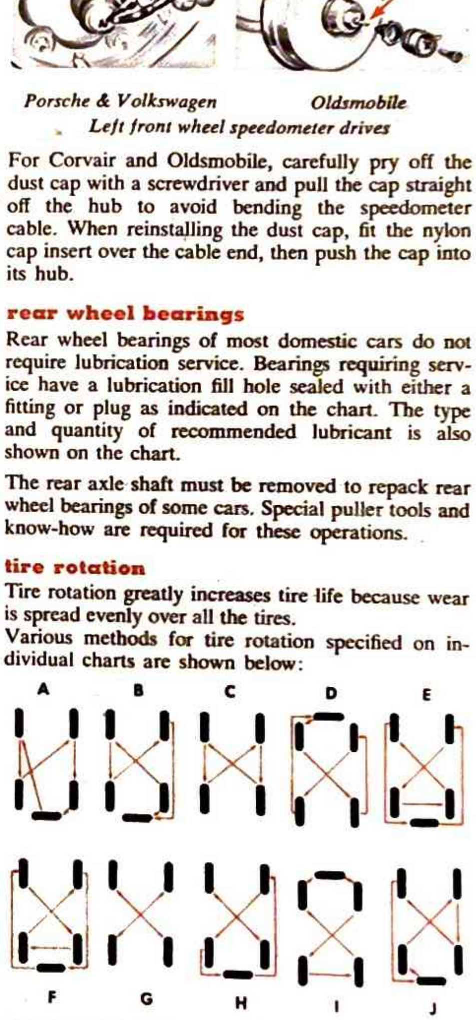
Rear wheel bearings of most domestic cars do not require lubrication service. Bearings requiring service have a lubrication fill hole sealed with either a fitting or plug as indicated on the chart. The type and quantity of recommended lubricant is also shown on the chart.

The rear axle shaft must be removed to repack rear wheel bearings of some cars. Special puller tools and know-how are required for these operations.

tire rotation

Tire rotation greatly increases tire life because wear is spread evenly over all the tires.

Various methods for tire rotation specified on individual charts are shown below:



Rotation of dual tires usually is governed by tire diameter.

- Keep tires reasonably well matched.
- Install new tire on front of truck.
- Mount tire with most tread on outside.

ENGINE TUNE-UP

when to tune-up

Tune-Up should be recommended whenever an engine is hard to start, loses power and performance, or uses an excessive amount of fuel. To keep an engine operating at maximum efficiency, recommend Tune-Up on a mileage interval as well as on a seasonal basis.

Full benefits of Tune-Up will be realized when combined with other periodic services shown on the chart: air cleaner service, fuel filter replacement, manifold heat control valve lubrication, crankcase ventilator system service, crankcase drain and refill, and oil filter replacement.

Operations listed in Tune-Up Data contained on every car model page in this Guide are arranged in a logical sequence. Follow this procedure to save time and provide the most satisfactory results.

Required equipment specified below is the economically-priced, portable type of test equipment with which the average stationman is familiar.

battery

The battery is tested first because it is the basic source of energy in the automotive electrical system.

The AABM battery group number listed in the data is a code number that indicates the battery's voltage, physical size and shape, cell arrangement, terminal post position and type of hold-down. A group number assures proper selection of a replacement battery. Ampere-hour capacity is listed because ampere-hour rating of a replacement battery should be at least that of the original. Amp.-hr. rating must also be known to perform certain battery tests.

Most passenger car and truck models covered in this Guide are equipped with a 12-volt battery. Where a 6-volt battery is used, it is so indicated in the Data.

Dual 6-volt battery installations, used in some imported cars, are indicated by (2).

Battery Testing:

A battery may be tested for: Specific gravity with a hydrometer; cell voltage variations by light load test with a low-reading voltmeter; capacity with a Battery-Starter Tester.

SPECIFIC GRAVITY TEST —

This test determines the battery state of charge. The hydrometer used measures percentage of acid in the battery solution.

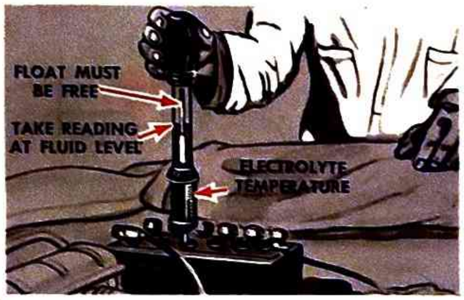
If the solution has full acid strength, the battery is in a full state of charge and, unless it is physically defective, should perform well.

If the solution is weak, most of the acid has soaked into the plates. Recharging the battery will drive acid out of the plates back into the solution, restoring battery strength and working ability.

1. Use hydrometer to draw electrolyte from cell until float is freely suspended. Do not draw too much electrolyte.
2. Read specific gravity on float scale at point even with electrolyte level and make necessary temperature correction.

Generally speaking, a fully-charged 12-volt battery has a specific gravity of 1.260 and a 6-volt battery has a specific gravity of 1.280. A battery with specific gravity of 1.220 or less is in need of charging.

3. Return electrolyte to cell from which drawn. Do not spill electrolyte on the car finish.
   CAUTION: If electrolyte contacts skin, rinse immediately in clean running water.
4. Check the specific gravity of each battery cell.
5. Add distilled or pure drinking water to the cells until level is about ⅜ inch above plates, or up to the full mark on fill wells.



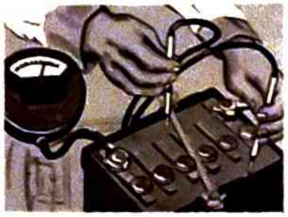
A specific gravity test indicates battery state of charge

LIGHT LOAD TEST —

A light load test indicates battery state of charge and reveals internal defects. Batteries with one-piece covers should be tested using the Capacity Test Method.

1. Connect jumper lead to distributor primary terminal and to ground.
2. Crank engine for 3 seconds.
3. Turn headlamps on low beam for at least 1 minute.
4. With headlamps still on, check individual cell voltages with voltmeter. Cell readings indicate:

CELL VOLTAGE	MAXIMUM VARIATION BETWEEN CELLS	BATTERY CONDITION
1.95 or more, all cells	Less than .05 volt	Good
Less than 1.95 for any cell	Less than .05 volt	Good, but needs charging
Less than 1.95 for all cells		Discharged. Charge and retest
1.95 or more for any cell	More than .05 volt	Defective. Replace battery

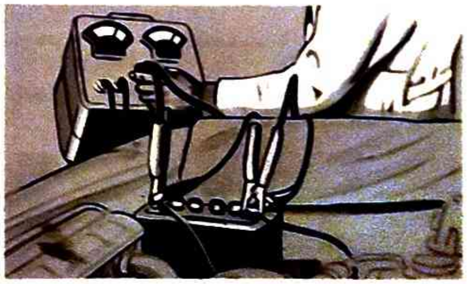


Testing individual cell voltage with low-reading voltmeter

CAPACITY TEST —

A battery at or near full charge can be tested for internal defects by a capacity test which duplicates maximum battery effort needed to crank a cold engine.

- Clip Battery-Starter Tester leads to battery terminals in proper polarity.



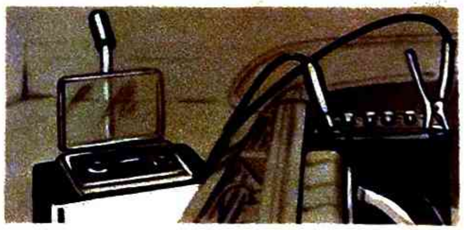
Conducting a battery capacity test

- Follow instructions of test equipment manufacturer.
- Recommend battery replacement if a 12-volt battery drops below 9 volts; or a 6-volt battery drops below 4.5 volts.

Battery Charge:

If the specific gravity test indicates the need for charging, proceed as follows:

- Add water to bring electrolyte to proper level.
- Charge battery in accordance with instructions furnished with charger.



A fast battery charger is an essential piece of equipment

CAUTION: When recharging the battery in a car equipped with an alternator, remove the battery cables from the battery before operating the charger. Never use a fast battery charger as a booster to start an engine equipped with an alternator.

Failure to observe these precautions may result in damage to the alternator diode rectifiers.

Do not smoke and avoid creating sparks near a battery that is being charged.

SERVICE INSTRUCTIONS

compression test

Cylinder compression is tested next because an engine with mechanical defects cannot be properly tuned.

This test reveals the presence of excessive carbon accumulation of such internal engine defects as sticking or leaking valves, worn or broken piston rings, worn cylinders, cracked or burned pistons or leaking head gaskets. These conditions must be corrected before Tune-Up can be effective. A compression test must include all cylinders.

Engine must be at operating temperature before a compression test is made.

Conduct the test as follows:

1. Air blast dirt from around spark plugs.
2. Disconnect spark plug cables by gently twisting the rubber boot and lifting cable terminal straight from plug.
3. Remove all spark plugs.

The compression test reveals internal engine conditions

4. Block linkage to hold throttle and choke open.
5. Place compression tester in No. 1 spark plug hole and crank engine about four compression strokes.
6. Observe and record highest pressure reading.
7. Test other cylinders and record highest readings.
8. Readings should agree with limits specified in Tune-Up Data.

Compression test readings generally indicate these engine conditions:

TEST INDICATIONS	ENGINE CONDITION
Readings lower than specified.	Worn piston rings, cylinder walls, and/or leaking valves.
Readings higher than specified.	Excessive carbon accumulation.
Low readings in adjacent cylinders.	Defective cylinder head gasket.
Low reading in one cylinder.	Broken piston rings or valves not fully seated.
No reading in any cylinder.	Broken piston or valves sticking open.

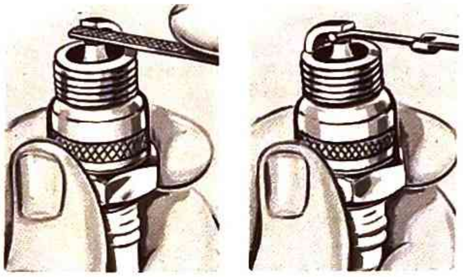
For detailed analysis of compression readings refer to the instrument manufacturer's instruction sheet.

spark plugs

Spark plugs should be serviced periodically to regap electrodes and to remove fouling carbon, lead and oil accumulations from insulator and electrodes. Replace plugs used for over 10,000 miles.

Service:

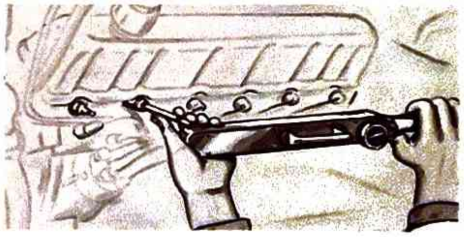
1. Remove oil from threads and insulators. Use kerosine or solvent, dry with air blast before sandblasting.



Careful filing and gapping of spark plug electrodes are critical spark plug service operations

2. Sandblast in spark plug cleaner. Be sure all abrasive is out of plug.
3. Clean threads with wire brush.
4. Bend side electrode slightly to open gap. File electrodes to get clean, flat, parallel surfaces between center and ground electrode.
5. Check electrode gap with feeler gauge and reset to specified gap listed in Tune-Up Data. Bend only the side electrode.
6. Position new gasket on spark plug and turn plug into cylinder head with the fingers. Apply lubricant to plug threads for aluminum head engines as indicated in Data.
7. Torque to specifications listed in Data.

NOTE: Gaskets are not used on tapered-seat spark plugs in Ford, Lincoln and Mercury cars since 1955. Similarly some Chrysler-built engines do not require spark plug gaskets, as specified on the charts.



Proper torquing of spark plugs is vital to efficient plug operation

Use the spark plug number listed in the Data to insure the selection of the proper replacement plugs.

ignition cables

Checking of cables is a part of a complete Tune-Up. *Inspect* insulation and cable terminals. Test carbon-impregnated core type cables with ohmmeter to see if resistance valve has not increased, if there is a break in the core or if terminals have become disconnected.

ignition points

Ignition points serve as an electrical rotary switch in the ignition primary circuit. Proper point operation is vital to efficient engine operation, so defective points must be replaced.

Insufficient ignition point gap causes hard starting and poor low-speed performance. Excessive point gap causes high-speed miss and poor acceleration. Recommended gap and dwell specifications are listed in the Data. Follow these service procedures:

Inspect and Adjust:

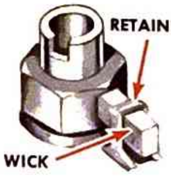
- Remove distributor cap. Wipe inside and outside of cap with a clean cloth. Replace cap if it is cracked or chipped, if insides of towers are corroded, or if terminals are burned or eroded. Also replace rotor if cap is replaced.
- Remove rotor. Inspect for cracks or breaks, burned and corroded tip and loose contact spring. Replace rotor if defective. Also replace cap when replacing rotor.

Carefully inspect cap for defects

- Inspect point condition. Replace points if pitted or burned, or if the breaker arm rubbing block is worn.

Inspect condition of points and breaker arm rubbing block

- Inspect condition of cam lubricator, if so equipped. Gently squeeze base of wick retainer with long nose pliers, remove lubricator, turn end-for-end and replace lubricator on breaker plate. Adjust squarely with wick just touching distributor cam.

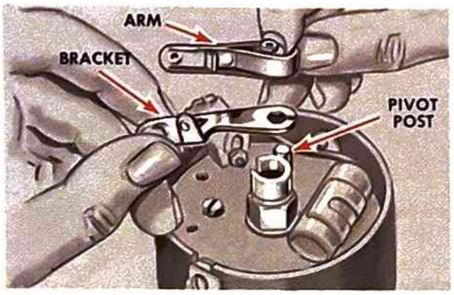


Adjust lubricator squarely with wick just touching lobe of cam

- Reset points to specifications with a dwell meter. Do not use a feeler gauge.
- Place drop of oil on breaker point pivot post.
- Apply thin film of cam lubricant to distributor cam.
- Replace rotor and cap.
- Check ignition timing and reset as required.

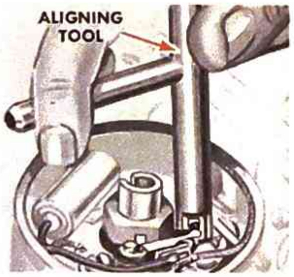
General point replacement procedure:

1. Loosen primary terminal nut, remove screw holding points to breaker plate, loosen breaker arm spring and lift arm assembly off pivot post. Lift stationary point bracket off breaker plate. Remove condenser attaching screw and lift out condenser.



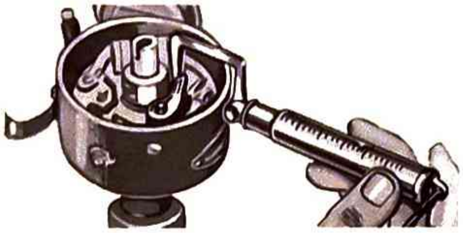
Lift breaker point arm and bracket off pivot post

2. Wipe breaker plate and distributor cam with clean cloth.
3. Position new stationary point support assembly over pivot post and adjusting screw. Insert and snug down lock screw. Lightly coat pivot post with motor oil. Install movable breaker arm pivot over post. Hook breaker arm spring over attaching terminal. Install new condenser. Tighten terminal nut. (Preassembled breaker point sets are installed as an assembly.)
4. Align contact points by carefully bending stationary point support. Do not bend the movable arm. Points should contact squarely.



Gently bend the stationary point support to align the points

5. Measure point spring tension with scale; adjust tension as required to meet specifications.



Using a scale to check breaker point spring tension

Breaker point spring tension specifications, in general, are as follows:

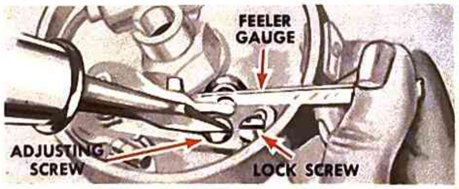
Autolite	17-20 ounces
Bosch	16 ounces
Delco	19-23 ounces
Lucas	18-24 ounces
Prestolite	17-20 ounces

Preassembled breaker points are point-aligned and tension adjusted at time of manufacture.

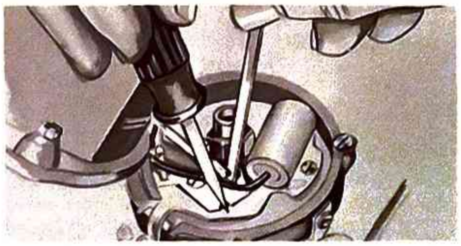
6. Adjust breaker point spacing by setting gap with feeler gauge or by setting dwell angle with dwell tester (except Delco external-adjustment type distributors).

To set point gap, proceed as follows:

- Bump engine with starter until breaker arm rubbing block is on high point of cam lobe. This position provides maximum point opening.
- Turn eccentric adjusting screw, or shift breaker plate, to obtain gap specified in Tune-Up Data. Feeler gauge must be flat and clean.



Setting point gap by turning eccentric adjusting screw

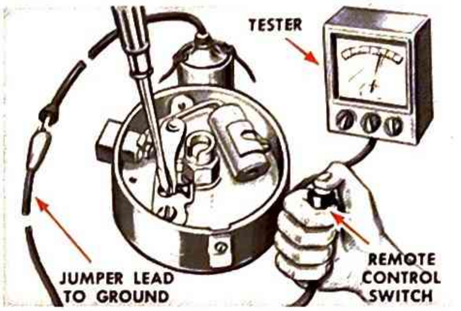


Setting point gap by shifting point bracket

- Tighten point support lock screw and recheck point gap.

To set dwell angle, proceed as follows:

- Connect dwell meter to distributor or coil distributor primary terminal, and to ground.
- Connect remote control switch.



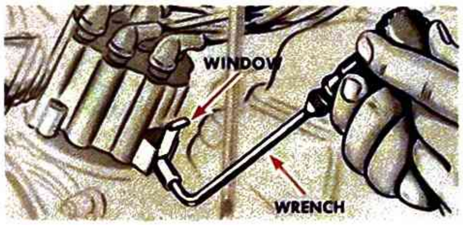
Using dwell meter and remote control switch to set point dwell angle

- Pull coil lead from distributor cap and ground lead with jumper.
- Lift cap from distributor and remove rotor.
- Turn on ignition switch.
- Crank engine and turn point adjusting screw, or shift point bracket, to obtain dwell setting specified in Data.
- Tighten point lock screw, remove jumper lead, press coil lead into distributor cap tower.

7. Apply a thin film of cam lubricant to breaker cam.
8. Clean points with lintless tape and solvent.
9. Replace distributor rotor and cap. Press cables securely into cap towers. Seat rubber boots over spark plugs.

To adjust dwell angle on Delco external-adjusting type distributors, proceed as follows:

- Connect dwell meter to coil distributor primary terminal and to ground.
- Start and idle engine.



Adjusting a Delco external-adjusting type distributor with the engine running

- Lift window, insert "hex" wrench in adjusting screw, turn screw to obtain dwell angle setting specified in Data.
- Completely close window.
- Check ignition timing, reset as required.

Ignition Point Service Precautions:

Always use a dwell meter rather than a feeler gauge to readjust used breaker points. A feeler gauge cannot measure true clearance between pitted points. To avoid damage to transistorized ignition systems, follow dwell meter manufacturer's instructions.

Never realign used breaker points; replace them. Do not clean used points with tape and solvent. Small pieces of lint torn from the cloth by pits on the points will prevent proper point contact and interfere with operation of the ignition system.

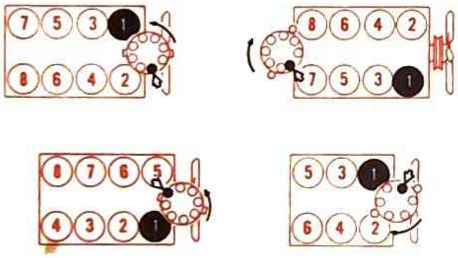
Always check the ignition timing after breaker point adjustment and reset it as required.

condenser

The potential life of ignition points is dependent upon the condenser. Sparking across ignition points is largely controlled by condenser capacity. Always replace the condenser when replacing ignition points. Recommended replacement condenser and its capacity are shown in the Tune-Up Data.

cylinder numbering sequence

Cylinder numbering sequence is illustrated in the Data because it varies with the engine designer. The cylinder used to ignition time the engine, usually No. 1, and its corresponding distributor cap tower, are identified in black on the engine illustration. Either of these points can be used for connecting the timing light when setting engine ignition timing. The distributor cap hold-down clip or screw positions are also indicated to accurately identify No. 1 cap tower position.



Examples of No. 1 cylinder position and cylinder numbering sequences

Direction of rotor rotation, as viewed from the top of the distributor, is indicated by an arrow on every distributor illustration.

Firing order of an engine is the sequence in which cylinders must be fired for smooth operation and full power. Firing order of the engine(s) is listed below every engine diagram(s) in the Data.

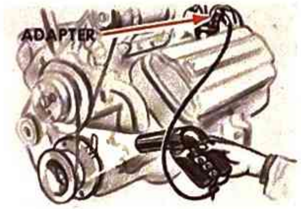
Knowing the position of the No. 1 tower in the distributor cap, the direction of rotor rotation and the firing order, will serve two important functions. First, cables can be properly connected to their respective spark plugs after plugs have been serviced or replaced. Second, when replacing defective spark plug cables with a new set, the new cables can be correctly positioned in the distributor cap by starting with No. 1 position and following the firing order around the cap in the direction of rotor rotation while selecting each cable for proper length.

When replacing cables, be sure to press the new cables firmly into the distributor cap towers, and to properly position cables in their holders, when used to prevent ignition cross-firing.

ignition timing

Correct ignition timing is one of the most important factors bearing on efficient and economical engine operation. It must be checked on every Tune-Up.

In most instances, ignition timing is checked with a timing light powered by battery current and "triggered" by voltage applied to the spark plug to which the light is connected—usually the one in No. 1 cylinder. If this spark plug is inaccessible, a timing light adapter can be inserted between the No. 1 distributor cap tower and its spark plug cable. The light can then be connected to the adapter.



Using No. 1 distributor cap tower for a timing light connection with the aid of an adapter

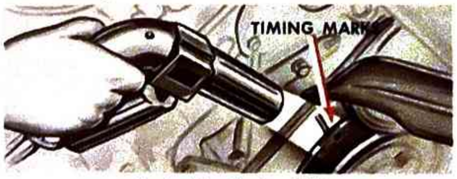
It is important that an adapter be used when necessary. DO NOT puncture spark plug cables with pins or clips to make a connection. Piercing the insulation results in permanent cable damage, loss of high-voltage current, and ignition misfiring.

Timing setting and location of timing mark are shown in the Tune-Up Data. Always refer to this Data for ignition timing procedures and specifications because they vary with different car manufacturers. Check the ignition point dwell or gap before setting ignition timing because any subsequent change in point dwell will change the timing.

Timing procedure:

Ignition timing procedures, in general, are:

1. Locate timing mark on harmonic balancer, crankshaft pulley or flywheel.
2. Bump engine with starter until timing mark appears. If marks are not readily visible, coat timing mark and reference pointer on engine with white chalk or paint.
3. Operate engine until normal operating temperature is reached. Stop engine.
4. Connect timing light to spark plug in No. 1 cylinder or to No. 1 cylinder distributor cap tower. Follow the light manufacturer's instructions.
5. Start engine. Timing light will flash each time No. 1 cylinder fires.

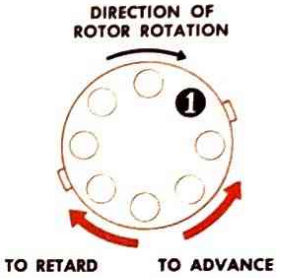


An ignition timing light

6. Operate engine at specified idle speed. Aim light at timing mark. CAUTION: Be careful of revolving fan blades.
7. Reset ignition timing if timing mark appears on either side of reference pointer.

Ignition timing is set by loosening the distributor clamp screw and slowly turning the distributor housing *against* rotor rotation to *advance* timing or *with* rotor rotation to *retard* timing, until the correct timing mark aligns with the reference pointer. Then tighten clamp screw and recheck timing.

Engines operating with retarded (late) ignition timing lack performance, waste fuel and have a tendency to overheat. Advanced (early) ignition timing causes spark knock and creates combustion chamber temperatures damaging to spark plugs and pistons.

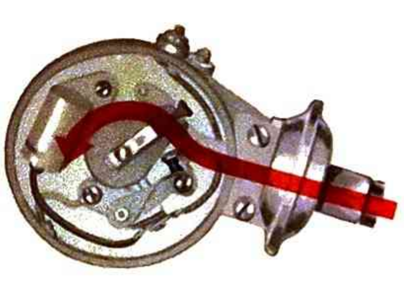


Ignition timing is set by turning the distributor housing in the direction of the bold arrows

Slowly turn the distributor housing in the direction indicated by arrows to align specified timing marks.

If ignition timing does not meet specifications, the condition has very likely been caused by wear on the rubbing block of the breaker point arm. Before resetting timing, inspect the condition of points and rubbing block. Replace defective points. If points pass inspection, adjust dwell angle and lubricate the distributor cam. Then reset ignition timing as required. Readjusting dwell angle may automatically reset timing.

Direction of rotor rotation may be determined without removing the distributor cap or cranking the engine by observing the position of the vacuum advance unit on the distributor housing.



Position of vacuum advance unit can indicate direction of rotor rotation

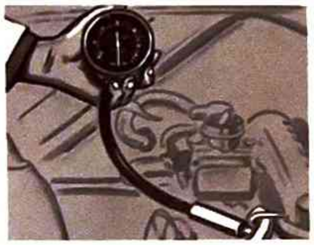
Function of the vacuum unit is to advance spark timing by moving the breaker plate *against* the direction of rotor rotation. Rotor rotation will therefore be *away* from the vacuum unit as indicated by the arrow in the illustration.

fuel pump

Fuel pump tests check ability of the pump to maintain the specified pressure and to supply the proper fuel volume to meet engine fuel requirements at all speeds and loads. Observe all safety fire rules when conducting the following general fuel pump test procedures.

Pressure Test:

- Disconnect fuel line at carburetor.
- Attach pressure gauge to disconnected fuel line.
- Idle engine at speed specified in Data.
- Note pressure reading on gauge.
- Replace fuel pump if pressure is out of limits.



A fuel pump pressure test

Volume Test: (for mechanical pumps)

- Insert tee in fuel line at carburetor.
- Attach length of tubing to tee.
- Start engine and run at recommended speed.
- Direct gasoline flowing from free end of tube into pint measure held level with carburetor.

A fuel pump volume test

- Observe time required to collect quantity of fuel specified. Replace fuel pump that delivers less than specified volume in time listed in Data.

carburetor adjustment

Carburetor adjustment takes place only when all other conditions pertaining to efficient engine performance have been checked, as previously described. An initial setting of the idle mixture screws should be made first. Then make the final adjustment. When seating idle mixture screws, stop turning screws inward as soon as the needle touches its seat. Forcibly seating mixture screws results in grooving the tapered needle tip and in damaging the needle seat, making fine idle adjustment impossible.

Initial Setting:

1. With engine stopped, turn adjusting screw(s) in (clockwise) until seated *lightly*.

Adjusting the carburetor idle mixture

2. Turn adjusting screw(s) out (counterclockwise) the number of turns specified in Tune-Up Data. When carburetor has two screws, give each the same number of turns.

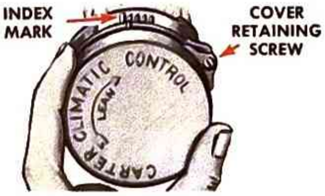
Final Adjustment:

3. Connect tachometer to distributor or coil distributor primary terminal, and to ground.
4. Start and operate engine until normal operating temperature is reached.
5. Adjust throttle stop screw for correct idle speed specified in Tune-Up Data.
6. Turn idle adjusting screws in equally until tachometer needle drops back slightly.
7. Turn idle adjusting screws out until tachometer returns to highest reading.
8. Adjust throttle stop screw for idle speed specified in Data.

Automatic Choke Adjustment:

Insufficient automatic choke action causes hard starting and continual stalling with a cold engine. Prolonged choke action causes excessive fuel consumption, fouled spark plugs, and crankcase motor oil dilution.

A scribed or embossed line on the choke body or carburetor air horn, called an index mark, is used to provide a setting for the tension adjustment of the bimetal thermostatic spring of the choke mechanism. Automatic choke covers are generally marked to indicate direction to turn the choke cover to secure the recommended adjustment.



Turning the choke cover sets the automatic choke adjustment

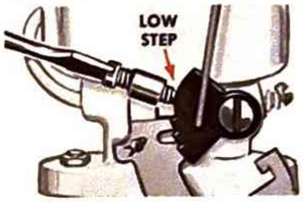
Chokes of this type are adjusted as follows:

- Loosen cover retaining screws.
- Adjust cover to position specified in the Data.
- Tighten retaining screws.

Another design has the thermostatic spring mounted on the manifold. If adjustment is prescribed, disconnect the upper end of the rod between this spring and the carburetor choke lever. Hold the choke valve closed and pull the rod up against its stop. As specified in the Data, the rod should be ½ to 1 diameter above the hole in the choke lever. If necessary, bend the rod to adjust its length.

engine idle speed

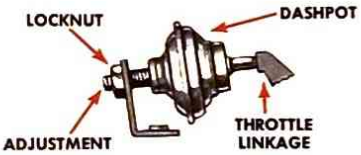
Correct engine idle speed is important: an idle speed set too low causes frequent engine stalling; set too high, it interferes with proper clutch engagement. In automatic transmission-equipped cars an idle speed set too high causes the car to "creep", requiring constant brake application at traffic lights.



Setting engine idle speed

Idle speed adjustment is made with engine at operating temperature and throttle stop screw resting on the low step of the fast idle cam. Recommended idle speed is specified in the Data.

A dashpot (throttle slow-closing device) is used on many cars. It prevents engine stalling when the throttle is closed suddenly.



Adjustment of most dashpots is a simple operation

If, after idle speed adjustment, an engine does not return to the same idle speed each time it is accelerated and idled, throttle linkage may be binding or the dashpot may be malfunctioning. Relieve linkage binding and replace dashpot if adjustment fails.

valve clearance

Cars equipped with hydraulic valve lifters automatically maintain a constant zero lash.

Valves that require adjustment are generally adjusted with the engine hot and running. If, because of engine design or other factors, it is recommended that the valves be adjusted when the engine is cold and not running, the Tune-Up Data will so indicate. The general valve clearance adjustment procedure is as follows:

1. Remove rocker arm or valve chamber cover.
2. Start and idle engine till normal operating temperature is reached.

Adjusting engine valve clearance

3. Pass feeler gauge between rocker arm and valve stem tip on all valves.
4. Adjust valves to clearance specified in Data.
5. Stop engine.
6. Replace cover. Be sure cover gasket is in perfect condition. If it is not, replace it.

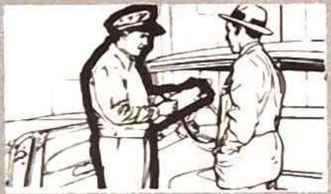
YOUR STEPS TO CAR SAFETY

The responsibility for maintaining your customer's cars in a safe operating condition lies to a great extent with you—the service station dealer. The average car owner depends on you to tell him what's wrong with his car, and the best way to repair it—whether it's a worn fan belt or a loose tie rod.

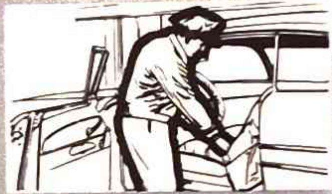
Your STEPS TO CAR SAFETY is designed to provide you with an organized procedure to follow in performing a complete safety service inspection. These steps are planned to save time by eliminating wasted motion, and to insure that every safety item is checked. Each step is important—even a burned out stop light can result in a costly collision.

You should perform a Safety-Chek on every car you service. But it is of vital importance to those cars where the manufacturer recommends an extended mileage lubrication service interval. Periodic inspection at normal intervals (and possibly at a nominal charge) will keep these cars in good operating condition and also open the door to increased profits in extra TBA sales.

A FRIENDLY BUSINESS-LIKE HELLO



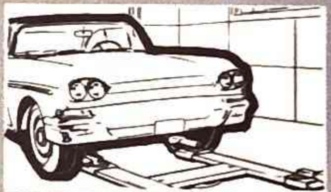
- Greet customer
- Write up order
- Show customer chart
- Explain need to service extended mileage points



- Install seat cover
- Protect steering wheel
- Release hood while you're still clean

SAFETY-CHEK WHILE PREPARING TO SERVICE CAR

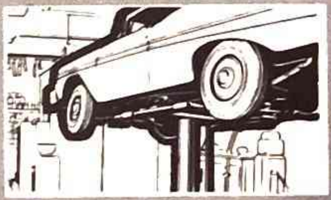
- While driving onto lift check:
  1. Action of clutch or automatic transmission safety switch
  2. Brakes—Stop lights
  3. Steering-free play—horn



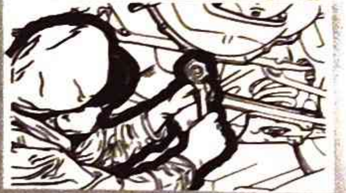
4. Windshield wiper and washer action
5. Headlights—upper and lower beams
6. All other bulbs
7. Seat belts

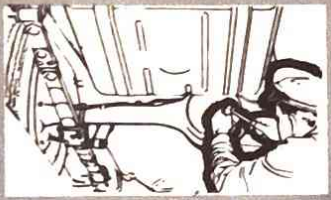
UNDER CAR SERVICE

- Follow lifting precaution if shown on chart
- Raise car
- Be sure safety bar is in place

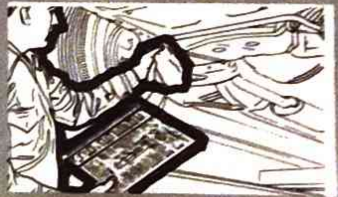


- Drain crankcase while oil is hot
  1. Use correct wrench and equipment for draining
  2. While draining crankcase change oil filter





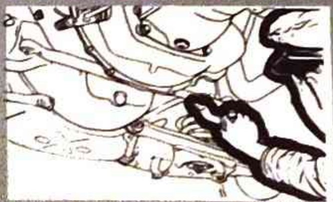
- Check differential lubricant level
  1. Check chart for limited-slip identification
  2. Use type and grade of lubricant specified on chart



- Check manual transmission level
- Use chart to locate all lubrication points
- Wipe fitting or plug before servicing
- Follow chart for correct product

UNDER CAR SAFETY-CHEK

- Front Suspension
  1. Loose mounting bolts
  2. Excessive play in ball joints, king pins or steering linkage
  3. Shock absorbers—loose mountings or leakage



- Rear Suspension
  1. Loose or worn shackles
  2. Broken spring leaves or worn liners
  3. Shock absorbers—loose mountings or leakage

YOUR STEPS TO CAR SAFETY

UNDER CAR SAFETY-CHEK Continued

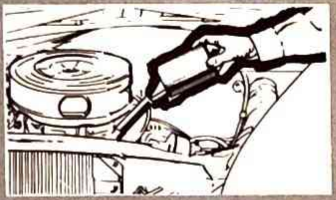
- Drive Line
  1. Universal joints—loose bolts or excessive play
  2. Lubricant leakage at transmission universal joints, differential and rear wheel bearings

- Exhaust System
  1. Leakage in exhaust pipe, muffler and tailpipe
  2. Loose or broken support brackets
  3. Tailpipe striking gas tank

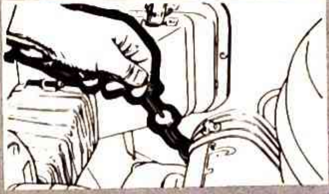
- Brakes
  1. Leakage in hydraulic lines, master cylinder and wheel cylinders
  2. Looseness in hand brake cables

- Tires
  1. Cuts or nails in tread
  2. Blisters and breaks in side walls
  3. Irregular or excessive tread wear

UNDER HOOD SERVICE



- Refill crankcase
- Recheck level on dipstick
- Wash oil fill cap and, if used, positive crankcase ventilation valve
- Check air cleaner

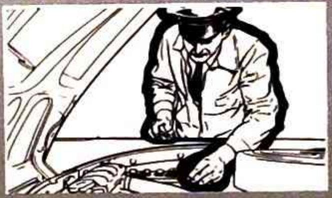


- Check fluid level in automatic transmission
- Check fluid level in brake master cylinder
- Use chart to locate all lube points

UNDER HOOD AND BODY SAFETY-CHEK

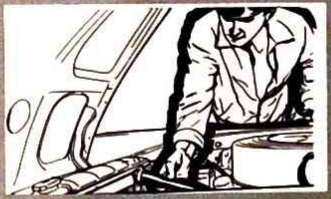
- Hood
  1. Check hood latch mechanism operation
  2. Check hood safety catch operation
  3. Lubricate hood hinges and latch

- Battery
  1. Check water level, add if necessary
  2. Test battery capacity
  3. Check cables
  4. Remove corrosion



- Cooling System
  1. Inspect radiator and heater hose
  2. Inspect belts, check tension
  3. Inspect and test radiator cap
  4. Test anti-freeze

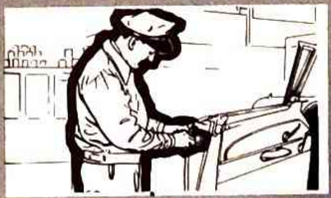
- Fuel System
  1. Clean or replace fuel filter
  2. Check fuel lines, pump and carburetor for leakage



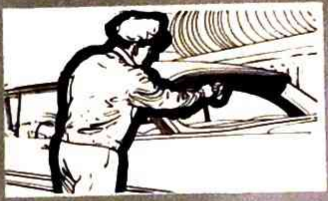
- Windshield
  1. Inspect wiper blades and arms
  2. Check washer fluid
  3. Check operation of wipers and washer

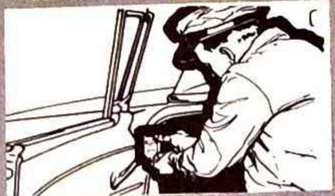
MAKE SURE CUSTOMER RETURNS

- Clean and lubricate hood and door hinges and latches
- Clean out body and door drains
- Brush out or vacuum floor
- Wash windows and rearview mirror

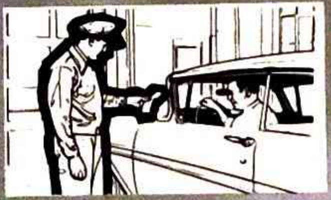


- Wipe off door handles and steering wheel
- Wipe off headlights and taillights
- Check tire pressures, including spare





- Place lubrication sticker on door
- Transfer extended mileage record of oil filter, etc., to new sticker
- Place engine oil change sticker under hood



- Give customer record of work performed
- Make follow-up to insure customer return

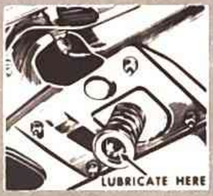
BODY LUBRICATION

Body maintenance is an important part of every lubrication job. A car that squeaks after lubrication results in a dissatisfied customer.

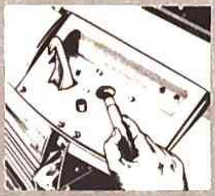
Always begin by wiping off old lubricant and accumulated dirt with a solvent moistened cloth. Apply fresh lubricant sparingly. Be especially careful to remove any excess lubricant from places which customer might brush against.

- Start with under hood points, then circle the car and lubricate door latches, hinges, weatherstrip and locks
- Open trunk or station wagon tail gate, service latch, check link, hinges and weatherstrip
- Lubricate fuel tank door and clean out body drain holes. Where found, lubricate sealing strips covering drains under doors
- Inside body, service window vent locks, glove compartment, ash receiver, parking brake and seat tracks
- Periodically repack speedometer cable and, on convertibles, lubricate top mechanism and zipper

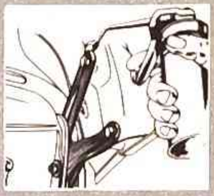
HOOD LATCH AND HINGES



Latch dowel . . . . DE

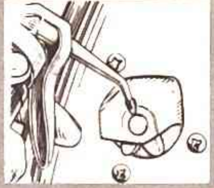


Latch plate . . . . DE
Safety catch . . . . MO

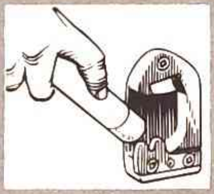


Hinges, at both
sides of hood. . . . . MO

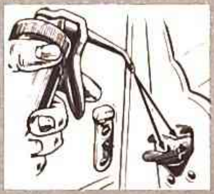
DOOR HARDWARE



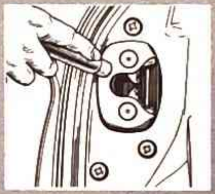
Rotary latch . . . . MO



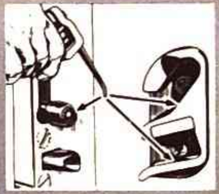
Rotary latch striker. . . . . DE



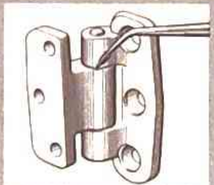
Toggle-type latch
and striker . . . . MO



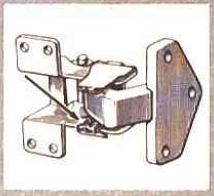
Double toggle-type latch
and striker . . . . DE



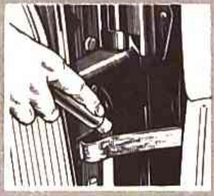
Lift bolt latch
and striker . . . . MO



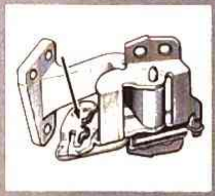
Hinge pins . . . . MO



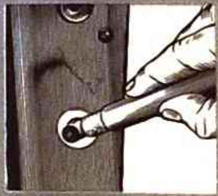
Spring-type hold-open CL



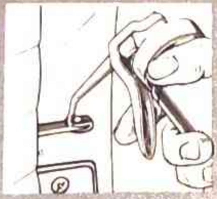
Tang-type hold-open . . . . . DE



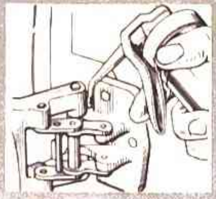
Roller-type hold-open CL



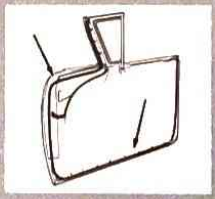
Courtesy light
switch button . . . . DE



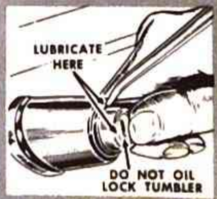
Strap-type check . . . . . . MO



Folding-type check . . . . . MO



Weatherstrip . . . . . RR or SE



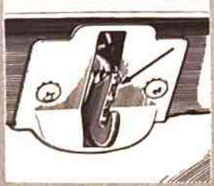
Push button . . . . MO
Lock tumblers . . . . FG

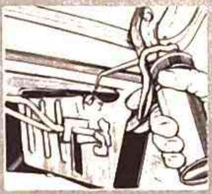
KEY TO LUBRICANTS

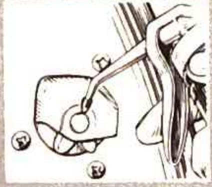
CL	Chassis Lubricant
DE	Dry Stick Lubricant
FG	Flake Graphite
HB	Hydraulic Brake Fluid, Heavy-Duty
MO	Motor Oil
RR	Rubber Lubricant
SE	Silicone Grease
SP	Speedometer Cable Grease

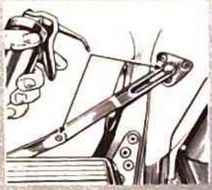
BODY LUBRICATION

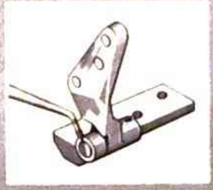
TRUNK DOOR AND TAIL GATE


Trunk latch ....DE

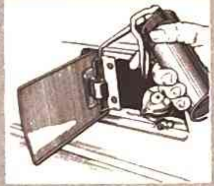

Trunk hinge pins.......MO

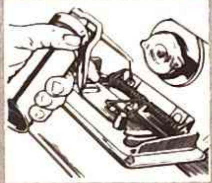

Tail gate latch.........MO


Tail gate check link.....MO

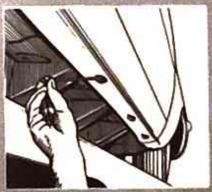

Tail gate hinge pins....MO

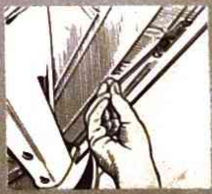
FUEL TANK COVER


Door in fender or body...MO

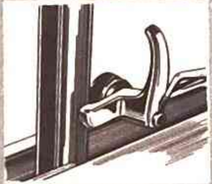

Behind license ....MO

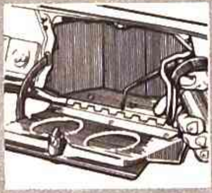
BODY DRAIN HOLES

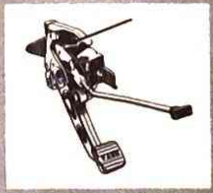

Clean out drain holes

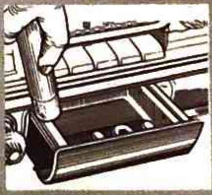

Door drain hole sealing strips ....SE

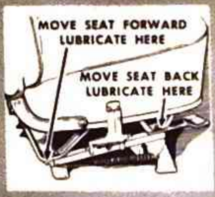
INSIDE BODY

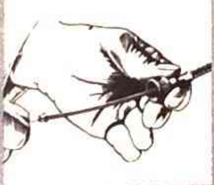

Vent lock ....MO


Glove compartment .....MO

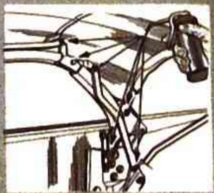

Parking brake CL

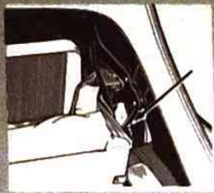

Ash receiver ....DE

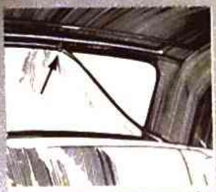

MOVE SEAT FORWARD LUBRICATE HERE
MOVE SEAT BACK LUBRICATE HERE
Seat track slides........CL


Speedometer cable .....SP
Coat lower ⅔ of cable
Speedometer head .....MO

CONVERTIBLE TOP


Pivot pins ....MO

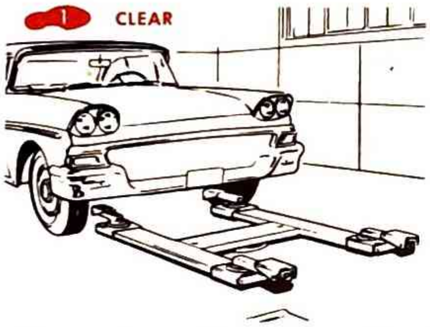

Piston rods ....HB


Window zipper ....SE

GENERAL FRAME ENGAGING LIFT CHART

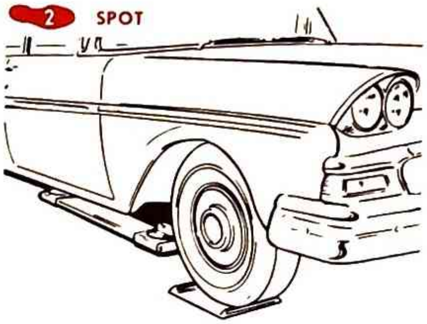
Most American cars prior to 1957 can be lifted on a frame engaging lift without adapters. Later models with wide or "X" frames or unitized bodies require special procedures. Added care must be used to lift cars with features such as air suspension, low-mounted exhaust systems or where brake lines are exposed. Follow the procedures on this chart and position adapters at points shown by red rectangles on Lubrication Charts.

1 CLEAR



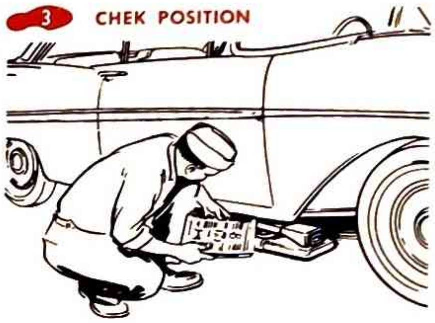
Make sure all parts of the car will clear lift and adapter members before driving car over lift.

2 SPOT



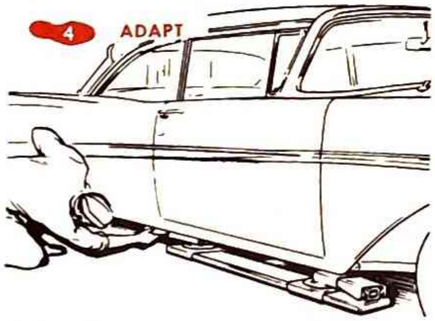
Spot wheel as shown above. On extremely short and long wheelbase cars it may be necessary to spot wheel behind or in front of the wheel plate.

3 CHEK POSITION



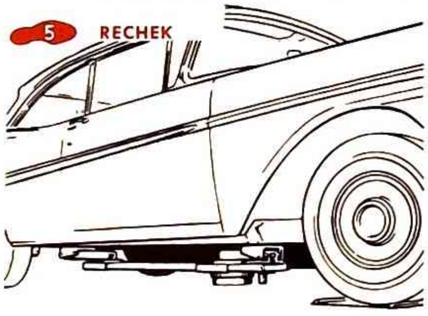
Check the lubrication chart for correct contact position on frame or body under which to place the adapters.

4 ADAPT



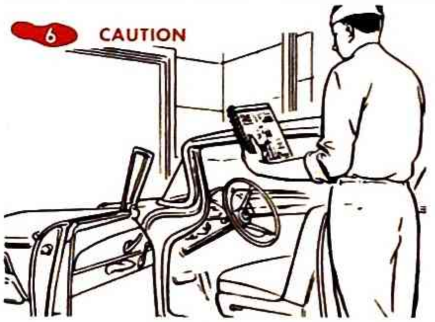
Swing adapters into proper position after spotting car. Be sure adapters contact at points shown on Lubrication Chart.

5 RECHEK



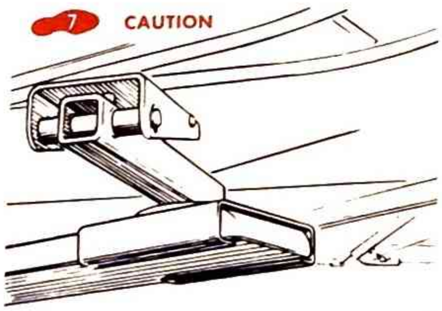
Raise lift slowly until adapters or lift contact understructure of car. Recheck adapter position and contact area.

6 CAUTION



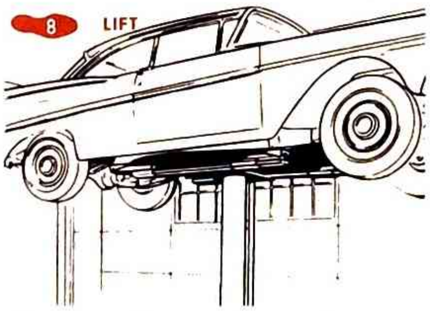
Observe precautions for air suspension equipped cars. See Lubrication Chart for lift precautions.

7 CAUTION



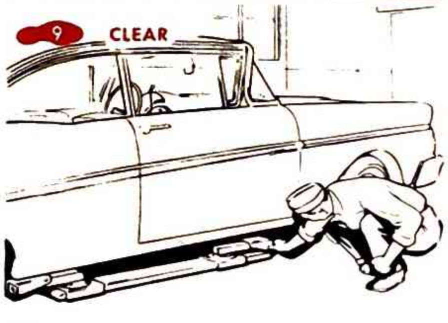
On 1962 and earlier American Motors cars be sure adapter engages two downward-turned body flanges near the rear wheels. Flange may be distorted if only one is contacted.

8 LIFT



Lift car to working level. Be sure safety support is in position to keep hoist from accidentally lowering.

9 CLEAR



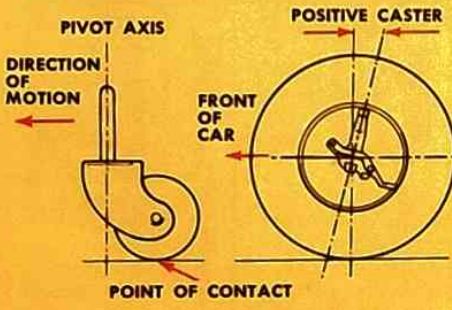
When car is lowered move adapters back to original position to allow plenty of clearance so car can be driven from lift.

FUNDAMENTALS

Wheel alignment service is the mechanics of measuring and adjusting these inter-related factors affecting steering: caster, camber and toe-in. Also measured, but not adjustable, are toe-out on turns and steering axis inclination.

caster

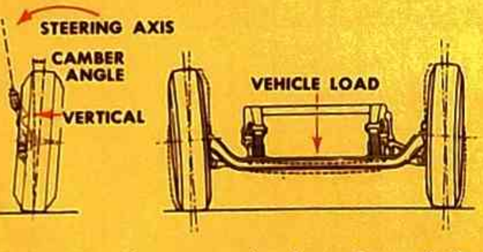
When a front wheel is turned, it pivots on an axis established either by the king pin or by two ball joints. If the top of this axis tilts to the rear, the car has positive caster (the pivot axis is forward of the point at which the tire contacts the road). When rolling, the wheel then tends to align itself with direction of travel, giving the car stability by resisting wheel-turning forces.



To decrease steering effort, some cars today have negative caster (steering axis tilts forward at top), and rely on other factors for directional stability.

camber

Inward or outward tilt of a wheel at the top is called camber. Outward tilt is positive camber, which places most of the vehicle's weight on the larger inner wheel bearing and compensates for front-axle flexing. A car with a small amount of positive camber, and its usual weight of passengers and cargo, will have front wheels that are as close to vertical as possible.



Independent front suspension keeps front wheels practically vertical as a car is loaded, decreasing the need for camber. However, camber adjustment remains very important because modern wide tires wear rapidly if camber is only slightly excessive.

toe-in

When the leading edges of front wheels are closer together than trailing edges, the wheels are said to have toe-in. As a car moves forward, certain factors tend to force leading edges of front wheels outward. Toe-in compensates for this in-motion effect and wheels actually roll straight ahead, minimizing tire wear. Also, whenever the car is moving, toe-out

U.S. PASSENGER CAR SPECIFICATIONS

Circled numbers ① show adjustment method illustrated at end of section. N/A indicates not adjustable.

VEHICLE MODEL		CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
		Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
BUICK													
1961-62•	③	−3	−2	−1	−½	+½	+1	3/16		5/16	20	22½	9°52′ @ ½
1963-64	③	+½	+1	+1½	0	+½	+1	1/32		5/16	20	22½	9°52′ @ ½
1965 LeSabre	③	+½	+1	+1½	0	+¼	+1	1/32		5/16	20	22°46′	10°43′ @ 0°53′
w/o power steering	③	+½	+1	+1½	0	+¼	+1	1/32		5/16	20	23°32′	10°43′ @ 0°53′
Wildcat, Electra	③	+½	+1	+1½	0	+¼	+1	1/32		5/16	20	23	10°43′ @ 0°53′
w/o power steering	③	+½	+1	+1½	0	+¼	+1	1/32		5/16	20	21°47′	10°43′ @ 0°53′
Riviera	③	+½	+1	+1½	0	+½	+1	1/32		5/16	20	22°5′	9°52′ @ 0°50′
SPECIAL 1961	③	−2½	−2	−1½	−1		−¼	1/16		⅜	20	23½	7½ @ 0
SPECIAL, SKYLARK 1962•	③	−2½	−2	−1½	−1		−¼	⅛		5/16	20	23½	7½ @ 0
1963•	③	−2½	−2	−1½	−1		−¼	1/32		5/16	20	23½	7½ @ 0
1964	③	−1	−½	0	0	+½	+1	1/32		5/16	20	21¼	8 @ 0
1965	③	−1	−½	0	0	+½	+1	⅛		¼	20	21°22′	8 @ 0
•All caster and camber measurements must be made with alignment blocks installed on car.							*Caster and camber variation between wheels should not exceed ¾°, ½° for 1964 Special and Skylark and all 1965.						
CADILLAC													
1961-65	⑦	−1½	−1	−½				1/16		⅛	18°10′ 20	20 22°11′	6 @ 0
Left front wheel	⑱				−⅛	0	+⅝						
Right front wheel	⑱				−⅜	−¼	+⅜						
*Caster variation between wheels must not exceed ½°.													
CHEVROLET													
1958	③	−½	0	+½	0	+½	+1	⅛		¼	18½	20	6¾-7¾ @ 0
1959	③	−½	0	+½	0	+½	+1	⅛		¼	18	20	6¾-7¾ @ 0
w/air suspension	③	+1	+1½	+2				0		¼			
1960-62	③	−½	0	+½	0	+½	+1	⅛		¼	18	20	6¾-7¾ @ 0
1963-64	③	−½	0	+½	0	+½	+1	1/16		3/16	18	20	6¾-7¾ @ 0
1965	③, ⑱	−¼	+¼	+¾	−¼	+¼	+¾	⅛		¼			7-8 @ 0
CHEVY II 1962-65	⑦, ⑱	+½	+1	+1½	0	+½	+1	⅛		¼	17½-19½	20	6½-7½ @ 0
CHEVELLE 1964	③	−1½	−1	−½	+¼	+¾	+1¼	1/16	⅛	3/16			7¼-8¼ @ 0
1965 SS, El Camino	③	−1	−½	0	0	+½	+1	⅛		¼			7¼-8¼ @ 0
All others	③	−1½	−1	−½									
CORVAIR 1960-61 Front	③, ⑦	+1½		+2	0	+½	+1	⅛		⅜	18	20	6½-7½ @ 0
Rear	N/A				+1	+1½	+2	0		¼			
1962-64 Front	③, ⑦	+1½		+2	0	+½	+1	⅛		⅜	18	20	6½-7½ @ 0
Rear	N/A				+½	+1	+1½	⅛		⅜			
1965 Front	⑦, ⑱	+1½	+2	+2½	+½	+1	+1½	⅛		⅜			6-7 @ 0
Rear	N/A				−1		0	⅛		⅜			
CORVETTE 1963-64 Front	③	+1¼	+1¾	+2¼	+¼	+¾	+1¼	3/16		5/16			
Rear	N/A				−⅝	−⅜	+⅛	0		1/16•			6½-7½ @ 0
1965 Front	③	+1	+1½	+2	+¼	+¾	+1¼	7/32		11/32			6½-7½ @ 0
Rear	N/A				−⅝	−⅜	−⅛	0•		1/16•			
•Toe-in for each wheel. Each rear wheel must be adjusted independently.							*Caster and camber variation between wheels should not exceed ½°.						
CHRYSLER													
1960	⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+⅛	+⅜	+⅝						
Right front wheel	⑥				−⅛	+⅛	+⅜						
1961-65	⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
DODGE													
1960	⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+⅛	+⅜	+⅝						
Right front wheel	⑥				−⅛	+⅛	+⅜						
1961 ex. Lancer	⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
1961 Lancer, All 1962-64 ex. 880	⑥	−1	−½	0				3/32	⅛	5/32	16½-18½	20	6½-8½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
1962-64 880	⑥	−1	−½	0				3/32	⅛	5/32	20	21½	5½-7½ @ 0
w/power steering	⑥	+¼	+¾	+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
1965 Dart	⑥	−1		0				3/32	⅛	5/32	17⅗	20	7½ @ 0
w/power steering	⑥	+¼		+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
Coronet	⑥	−1		0				3/32	⅛	5/32	17⅘	20	7½ @ 0
w/power steering	⑥	−¼		+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						
Monaco, 880, Polara	⑥	−1		0				3/32	⅛	5/32	18⅘	20	9 @ 0
w/power steering	⑥	−¼		+1¼									
Left front wheel	⑥				+¼	+½	+¾						
Right front wheel	⑥				0	+¼	+½						

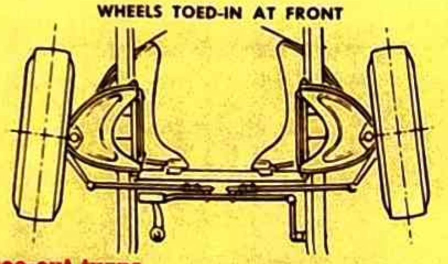
*Difference between left and right wheels should not exceed ¾° and right side should have more positive caster.

Special Instructions for Checking Suspension Height

Front suspension height must be within specified limits before caster and camber are checked. With full fuel tank, correct tire pressure and no passengers, or luggage, measure distance to floor from bottom of lower control arm bushing and from bottom of lower ball joint. Front suspension height is amount first measurement exceeds second and it is changed by turning adjusting bolt at rear of torsion bar.

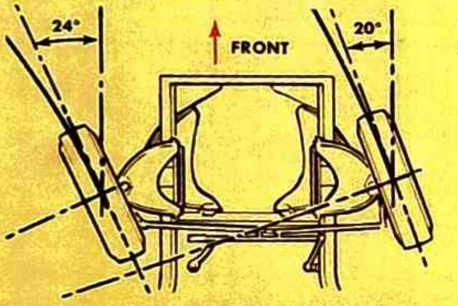
Front suspension heights for right and left lower control arms should be within ⅛ inch and as follows:
1960 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅛″ ± ⅛″.
1961 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅛″ ± ⅛″.
1962 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅛″ ± ⅛″; 300H, 1⅝″ ± ⅛″.
1963-65 2″ ± ⅛″; station wagons, 2⅛″ ± ⅛″; 300J (1965, 300K), 1⅝″ ± ⅛″.

forces and toe-in setting combine to keep a continual load on steering linkage. This eliminates free play in linkage, giving more precise car control.



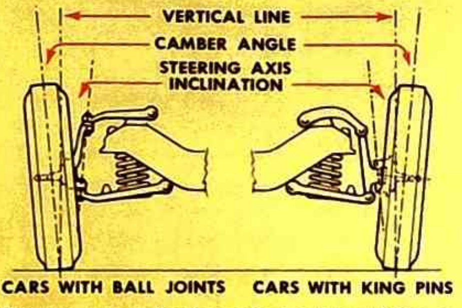
toe-out turns

When a car turns, the inside front wheel pivots more sharply than the outside wheel. In pivoting then, front wheels are toed out.

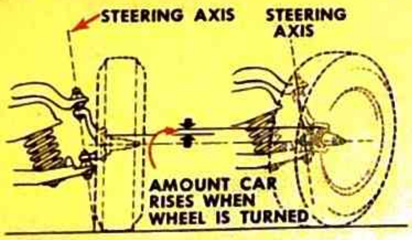


steering axis inclination

This term describes inward slant of the steering spindle at the top. It reduces road shocks on the steering system by allowing the steering pivot centerline to pass through where the tire contacts the road.



Steering axis inclination aids steering stability, reducing the need for caster. This is a result of front-wheel spindle action. Front wheels in a straight-ahead position have spindles practically horizontal. But due to the inclined axis on which spindles pivot, their outer ends begin to point downward as wheels



U.S. PASSENGER CAR SPECIFICATIONS

Circled numbers ① show adjustment method illustrated at end of section. N/A indicates not adjustable.

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
DODGE Continued												
FORD												
1961 ①	−½		+½	+¼		+1	⅛		¼	20	24¼	
1962-63 ①	−½	0	+½	+⅛	+½	+⅞	⅛		¼	20	24¼	
1964 ①	−½	0	+½	+¼	+⅝	+1	⅛	3/16	¼	17⅜-17⅝	20	7⅝ @ +⅜
1965 ③	0	+1	+2	−¼	+½	+1	⅛	3/16	¼	18⅛	20	7½ @ +¾
FAIRLANE 1962 ③	−½	0	+½	0	+½	+1	1/16		5/16	20	20¾	
1963 ③	−½	0	+½	0	+½	+1	1/16		5/16	20	23½	
1964 ③	−½	0	+½	0	+½	+1	1/16		5/16	17⅜-17⅝	20	7⅝ @ +½
1965 ③	−1	0	+1	−½	+¼	+1	3/32	7/32	11/32	17½	20	7¾ @ 0
FALCON 1960 ①	0		+1	0		+1	3/32		7/32	20	20¾	
1961-63 ①	0		+1	0		+1	⅛		5/16	20	20½	
1964 6-cyl. ①	0		+1	0		+1	¼		5/16	19-19¼	20	7¾ @ +½
w/power steering										20-20¼	20	7¾ @ +½
all 8-cyl. ①	0		+1	0		+1	⅛		5/16	18¾-19	20	7¾ @ +½
1965 6-cylinder ①	−¼	+½	+1¼	−¼	+½	+1¼	3/32	7/32	11/32	19⅛	20	7¾ @ +½
w/power steering ①										20⅛	20	
All 8-cyl. ①	−1¼	−¼	+¾	−¼	+½	+1¼	3/32	7/32	11/32	18⅞	20	7¾ @ +½
MUSTANG 1965 6-cyl. ①	0	+1	+2	−¼	+½	+1¼	3/32	7/32	11/32	19⅛	20	7¾ @ +½
w/power steering ①										20⅛	20	
All 8-cyl. ①	−1	0	+1	−¼	+½	+1¼	3/32	7/32	11/32	18⅞	20	7¾ @ +½
THUNDERBIRD 1961 ⑧, ⑪	−1¼		−¼	0		+1	1/16		⅛	20	20½	
1962-63 ⑧, ⑪	−2¼		−¾	0	+⅜	+¾	⅛		¼	20	20½	
1964 ⑧, ⑪	−2¼	−1½	−¾	0	+⅜	+¾	⅛	⅛	¼	18¾-19	20	7⅝ @ +⅜
1965 ⑧, ⑪	−3¼	−1½	−1¼	−¼	+½	+1	⅛	3/16	¼	19½	20	7 @ +½
*Maximum variation between wheels, ½°, ¼° preferred.												
IMPERIAL												
1962-65 ⑤	+¼	+¾	+1¼				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
Left front wheel ⑤				+¼	+½	+¾						
Right front wheel ⑤				0	+¼	+½						
'JEEP'												
1945-65 Universal Jeep 4x4 ⑭		+3			+1½		3/64		3/32	20	20	7½ @ 0
1963-65 Wagoneer J-100 Station wagon												
Solid axle ⑭		+3			+1½		3/64		3/32	19½	20	7½
Independent suspension ⑦, ⑮	+3¼		+4¾	+1¾		+2¼	3/64		3/32	19½	20	7½
LINCOLN												
1961-62 Continental ③	−1½		0	0		+¾	1/16		5/16	17⅘	20	7 @ +¼
1963-64 Continental ③	−2¼	−1½	−¾	0	+½	+¾	⅛	⅛	¼	17-7/10	20	7 @ +¾
1965 ③	−2½	−1½	+½	+¼	+¾	+1½	1/32	5/32	9/32	17¼	20	7 @ +¾
*Maximum variation between wheels ½°, ¼° preferred.												
MERCURY												
1961-63 ①	−½	0	+½	+¼	+½	+1	⅛	3/16	¼	20	24¼	7 @ +¾
1964 ①	−1	0	+1	0	+⅝	+1¼	⅛	3/16	¼	20	20½	6¾ @ +½
1965 ①	0	+1	+2	+¼	+½	+1	⅛	3/16	¼	18¼	20	7½ @ +¼
COMET 1960-64 ①	−½	−½	+1½	−¼	+½	+1¼	⅛	7/32	5/16	20	20¾	
1965 6-cyl. ①	−¼	+¾	+1¾	−¼	+½	+1½	3/32	7/32	11/32	19⅛	20	7¼ @ +½
w/power steering ①										20⅛	20	
All 8-cyl. ①	−1¼	−¼	+¾	−¼	+½	+1¼	3/32	7/32	11/32	18⅛	20	7¼ @ +½
METEOR 1962 ③	−½	0	+½	0	+½	+1	1/16		3/16	20	23½	
1963 ③	−½	0	+½	0	+½	+1	3/16	¼	21/64	20	23½	
OLDSMOBILE												
1961-64 ②	−1		0	−¼		+½	0		1/16	20	22½-23½	10 @ +1
w/power steering ②	−1		0	−¼		+½	0		1/16	20	23½-24½	10 @ +1
1965 ②	−1½		−½	−¼		+½	⅛		3/16	18¼	20	11 @ 0
w/power steering ②										17¾	20	
F-85 1961-63 ②	−1¾		−¾	−¾		+⅜	0	1/16	⅛	20	22½-23½	7½ @ 0
1964 ②	−1½		−½	−¼		+½	1/16		⅛	18⅖	20	8 @ +1
1965 ②	−2		−½	−¼		+½	⅛		3/16	18⅕	20	11 @ 0
*Maximum variation between wheels, ½°.												
PLYMOUTH												
1960 ⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering ⑥	+¼	+¾	+1¼									
Left front wheel ⑥				+¼	+½	+¾						
Right front wheel ⑥				−¼	+¼	+½						

DODGE Continued notes:

*Difference between left and right wheels should not exceed ¾° and right should have more positive caster.

Special Instructions for Checking Suspension Height

Front suspension height must be within specified limits before caster and camber are checked. With full fuel tank, correct tire pressure and no passengers, or luggage, measure distance to floor from bottom of lower control arm bushing and from bottom of lower ball joint. Front suspension height is amount first measurement exceeds second and it is changed by turning adjusting bolt at rear of torsion bar.

Front suspension heights for right and left lower control arms should be within ⅛ inch and as follows:

1960 Dodge, 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2½″ ± ⅛″.
1961 Dodge, 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅜″ ± ⅛″.
1961 Lancer, 1⅜″ ± ⅛″.
1962 Dart, 1⅝″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅛″ ± ⅛″.
1962 880, 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2⅜″ ± ⅛″.
1962 Lancer, 2″ ± ⅛″; station wagons and cars with heavy-duty springs, 2¾″ ± ⅛″.
1963-64 Dodge, 1¾″ ± ⅛″; cars with heavy-duty springs, 2⅛″ ± ⅛″.
1963 Dart, 2⅛″ ± ⅛″; cars with heavy-duty springs, 2⅝″ ± ⅛″
1964 Dart, 2″ ± ⅛″; cars with heavy-duty springs, 2⅜″ ± ⅛″
1963-64 880, 2″ ± ⅛″; suburbans, 2⅜″ ± ⅛″.
1965 Dart, 2″ ± ⅛″; with heavy-duty suspension, 2⅜″ ± ⅛″
1965 Coronet, 1¾″ ± ⅛″; with heavy-duty suspension, 2⅛″ ± ⅛″.
1965 Monaco, 880 or Polara; 1⅝″ ± ⅛″.

IMPERIAL notes:

*Difference between left and right wheels should not exceed ¾° and right should have more positive caster.

Special Instructions for Checking Suspension Height

Front suspension height must be within specified limits before caster and camber are checked. With full fuel tank, correct tire pressure and no passengers, or luggage, measure distance to floor from bottom of lower control arm bushing and from bottom of lower ball joint. Front suspension height is amount first measurement exceeds second and it is changed by turning adjusting bolt at rear of torsion bar.

Front suspension heights for right and left lower control arms should be within ⅛ inch and as follows:

1960-62, 2″ ± ⅛″; cars with heavy-duty springs, 2½″ ± ⅛″.
1963-65, 2″ ± ⅛″.

re turned. However, because of their fixed position n the wheel, spindle ends cannot drop closer to the oad. So inner spindle ends are forced upward, lifting the front of the car.

After a turn, when force applied to the steering wheel is released, car weight on the spindle forces front wheels to return to straight-ahead position.

WHEN TO ALIGN WHEELS

Alignment of front wheels should be recommended when:

1. Tire wear is irregular
2. Tire wear rate is excessive
3. Car steers hard or pulls to one side
4. Steering wheel spokes are in an unusual position when car is traveling straight
5. Front suspension or steering linkage components are replaced
6. Front springs are shimmed, adjusted or replaced
7. Car has suffered a front-end collision
8. Either wheel has an exaggerated tilt
9. Front tires are rotated or replaced

preliminary checks

The first pre-alignment check determines that a car is at "curb weight"—that is, it has a full fuel tank, proper amounts of coolant and lubricant, and is fully unloaded except for the spare tire. All other pre-alignment checks are listed below; any defects found must be corrected by adjustment or replacement if alignment service is to be accurate.

1. Check shock absorber action by bouncing car at all four corners.
2. Examine front springs for sagging or breakage.
   - If front springs are of torsion bar type, adjust to recommended height.
3. Adjust tire pressure to manufacturer's recommendations.
4. Jack up front of car and spin each wheel. An out-of-round condition or wobble at the tire tread in excess of ⅛" will cause vibration, regardless of wheel balance.
   - Make sure tire is properly seated in wheel rim.
5. Check front wheel bearings; eliminate looseness.
6. Examine tie rod ends and steering arms for looseness.
7. Check steering wheel for binding or excessive free play. Be sure steering gear housing is tight on frame.
8. Test control arms and king pins or ball joints for excessive looseness.

CORRECTING FRONT WHEEL ALIGNMENT

Because adjustment of one alignment angle will affect another, perform alignment adjustment in this order: (1) caster; (2) camber; (3) toe-in.

caster and camber adjustment integrated types

Caster:

With ball-joint front suspension, caster is usually increased by moving the upper ball joint to the rear. Do this by moving inner pivots for the upper control arm out at the front, in at the rear. Most cars have shims under the control arm mounting bolts

U.S. PASSENGER CAR SPECIFICATIONS

Circled numbers ① show adjustment method illustrated at end of section. N/A indicates not adjustable.

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
PLYMOUTH Continued												
1961 ⑥	−1	−½	0				3/32	⅛	5/32	20	20½-22½	5½-7½ @ 0
w/power steering ⑥	+¼	+¾	+1¼									
Left front wheel ⑥				+¼	+½	+¾						
Right front wheel ⑥				0	+¼	+½						
1960-61 Valiant, All 1962-65 ⑥	−1	−½	0				3/32	⅛	5/32	16½-18½	20	6½-8½ @ 0
w/power steering ⑥	+¼	+¾	+1¼									
Left front wheel ⑥				+¼	+½	+¾						
Right front wheel ⑥				0	+¼	+½						

*Difference between left and right wheels should not exceed ¾° and right should have more positive caster.

Special Instructions for Checking Suspension Height

Front suspension height must be within specified limits before caster and camber are checked. With full fuel tank correct tire pressure and no passengers, or luggage, measure distance to floor from bottom of lower control arm bushing and from bottom of lower ball joint. Front suspension height is amount first measurement exceeds second and it is changed by turning adjusting bolt at rear of torsion bar.

Front suspension heights for right and left lower control arms should be within ⅛ inch and as follows:

Plymouth	1960	2" ± ⅛"; station wagons and cars with heavy-duty springs, 2½" ± ⅛".
	1961	2" ± ⅛"; station wagons and cars with heavy-duty springs, 2⅜" ± ⅛".
	1962	1½" ± ⅛"; cars with heavy-duty springs, 1⅞" ± ⅛".
	1963-65	1¾" ± ⅛"; cars with heavy-duty springs, 2⅛" ± ⅛".
Valiant	1960-61	1¾" ± ⅛".
	1962	1⅞" ± ⅛"; cars with heavy-duty springs, 2¼" ± ⅛".
	1963	2⅛" ± ⅛"; cars with heavy-duty springs, 2⅜" ± ⅛".
	1964-65	2" ± ⅛"; cars with heavy-duty springs, 2⅜" ± ⅛".

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
PONTIAC												
1961-64 ③	−2	−1½	−1	−¼	+¼	+¾	0		⅛	19	20	4⅝ @ 0
1965 ③	−2	−1½	−1	−¼	+¼	+¾	0		⅛	19	20	8½ @ +1
w/power steering ③	−½	0	+½									
TEMPEST 1961-63												
Front wheels 1961-63 ③, ⑦	+1⅛	+1⅝	+2⅛	−0°22′	−0°8′	+0°38′	0		⅛	18-19	20	
Rear wheels 1961							0		⅛			
Rear wheels 1962							0		¼			
Rear wheels 1963							1/16		3/16			
TEMPEST 1964-65 ②	−2	−1½	−1	−¼	+¼	+¾	0		⅛	18-19	20	9 @ 0
Station wagon ②	−2½	−2	−1½									

*To correct for road crown, set left wheel camber up to +¼° more than right wheel.

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
RAMBLER												
1960-61 ⑥	0	+½	+½	−¼	0	+¼	1/16		3/16	20	22	6½ @ 0
w/power steering ⑥	+½	+1	+1									
1962-63 ⑤	−¼	0	+¼				1/16	⅛	3/16	20	22	6°11′ @ +½
w/power steering ⑤	+½	+1	+1									
Left front wheel ⑤				−¼	+⅛	+¼						
Right front wheel ⑤				−¼	0	+¼						
1964 ⑤	0		+½	−¼	0	+¼	1/16	⅛	3/16	22	25	6°11′ @ +½
w/power steering ⑤	+¾	+1½	+1½									
1965 ⑤	0		+½	−¼	0	+¼	1/16	⅛	3/16	22	25	6½ @ 0
w/power steering ⑤	+¾	+1½	+1½									
AMERICAN 1960-61 ④	0	+½	+½	−¼	0	+¼	1/16		3/16	20	21½	8 @ 0
w/power steering ④	+1½	+2	+2									
1962-63 ④	−¼	0	+¼				1/16	⅛	3/16	22	25	8 @ 0
w/power steering ④	+1½	+2	+2									
Left front wheel ④				0	+¼	+⅜						
Right front wheel ④				0	0	+⅜						
1964-65 ⑦, ⑩	0		+½	−¼	0	+¼	1/16	⅛	3/16	22	25	6½ @ 0
w/power steering ⑦	+¾	+1½	+1½									
STUDEBAKER												
1959-60 ⑭	−2½		−1				1/16		⅛	17-18	20	6 @ 0
Left front wheel ⑭				0	+½	+1						
Right front wheel ⑭				−½	0	+½						
1961 ⑭	−1¼		+¼				1/16		⅛	17-18	20	6 @ 0
Left front wheel ⑭				0	+½	+1						
Right front wheel ⑭				−½	0	+½						
1962-65 except Avanti ⑭	−1¼		+¼				3/16•		¼•	17-18	20	6 @ 0
Left front wheel ⑭				0	+½	+1						
Right front wheel ⑭				−½	0	+½						
1962 Hawk w/power steering ⑭							1/16		⅛			
1963 w/power steering ⑭							1/16		⅛			
1963-64 Avanti ⑭	−¾		+¾				3/16		¼	17-18	20	6 @ 0
w/power steering							1/16		⅛			
Left front wheel ⑭				0	+½	+1						
Right front wheel ⑭				−½	0	+½						

*Caster variation between wheels must not exceed ¾°; 1965, ½°. •1965, if normal load is 5-6 passengers, 5/16" is permissible.

IMPORTED CAR SPECIFICATIONS

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
AUSTIN-HEALEY												
100, 100 Six N/A		+1¾			+1		1/16		⅛			6½
3000 Series Mark I, II, III N/A		+2			+1		1/16		⅛			6½
Sprite Mark I, II, III N/A		+3			+¾		0		⅛			6¾
FIAT												
1957-63 1100 Series ex. 1100D; 1958-64 1200 Spider N/A	+1⅔	+2¼	+2⅔	+⅙	+½	+⅚	3/64		⅛			7
1962-65 1100D N/A	+½		+1⅙	−5/32		+⅙	5/16		25/64			
1964-65 1500-118H Spider N/A	+1		+1⅔	0°		+⅔	5/64		13/64			
FORD												
1960-65 Anglia N/A	+1½		+3	+½		+2½	⅛		5/16	16°54′-18°24′	20	4¼-6¼ @ ½-2½
1962-65 Consul 315, Capri N/A	+1		+2½	+⅝		+2½	⅛		5/16	17°-18½	20	6¼-7 @ ½-2½
1963-65 Cortina N/A	+0°33′		+2°3′	+⅔		+2⅙	1/16		⅛	17°22′-18°52′	20	4°26′-5°56′ @ ⅔-2⅙

(Fig. 1), so transferring shims from under the rear bolt to the front bolt increases caster. Reversing this process decreases caster. When shims are located outside the pivot shaft (Fig. 2), the procedure is reversed. Some cars have mounting bolts in slotted holes in the chassis frame, and caster adjustment is made by repositioning the bolts (Fig. 3). When shims are at the inner ends of lower control arms (Fig. 4), increase caster by moving the lower ball joint forward.

Some cars have adjusting cams located at inner ends of the upper control arm (Fig. 5), or at the lower control arm (Fig. 6). After its lock nut is loosened, each cam bolt can be turned to reposition the control arm. Caster usually is adjusted with minimal affect on camber by turning the two cams an equal amount in opposite directions.

Camber:

All designs in Figs. 1-6 have integrated adjustments for caster and camber. The same shims or cams will set both. To increase camber, move upper control arm *outward* or lower control arm *inward*. Camber is reduced by reversing this process.

separated types

Caster:

On ball-joint front suspension, with separate means for adjusting caster and camber, always adjust caster first. If a round strut rod braces the lower control arm, often caster can be set by adjusting strut length to move the lower control arm. Either nuts (Fig. 7) or serrations in the strut rod (Fig. 8) provide means for this adjustment. Caster is adjusted on some cars by turning the upper control arm mounting shaft and moving the arm forward or backward (Fig. 9). Camber, on these cars, is adjusted by shims.

Camber:

Where a round strut rod braces the lower control arm, camber may be adjusted either by a cam (Fig. 10) or by shims (Fig. 11) at the inner end of the control arm. Movement of the upper ball joint by means of slotted holes in the upper control arm will change camber (Fig. 12). Rotation of an eccentric bushing around the upper ball joint stud (Fig. 13) also changes camber. The stud nut must be loosened to turn this bushing.

adjustment of non-ball joints

For most cars without ball joints, caster and camber are adjusted by rotating the upper control arm pivot pin (Fig. 14) after removing a lubrication fitting and loosening a clamp bolt. This pin is bored off-center and threaded. As it is turned, the king pin inclines fore and aft to change caster, in and out to change camber. Set caster first, then rotate pivot pin not more than ½ turn in either direction to adjust camber.

One type of suspension system is mounted on two rubber pads and aligned by two forward-mounted flat springs (Fig. 15). Caster is adjusted by an eccentric pin at the front of each spring; camber by an eccentric pivot pin in the upper control arm.

On trucks with a solid axle, caster is changed with wedge-shaped shims between the spring and its seat on the axle (Fig. 16). Neither camber setting nor unequal caster angles can be changed on these vehicles except by bending the axle.

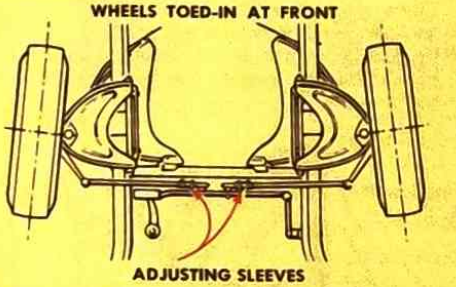
IMPORTED CAR SPECIFICATIONS

Circled numbers ① show adjustment method illustrated at end of section. N/A indicates not adjustable.

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
HILLMAN												
1957-62 Minx Series I, II, III, III-A, -B, -C; 1957-65 Husky Series I, II, III ③				+½	+⅝	+1		1/16		20	22½-23	5¼ @ 0°45'
1962 Super Minx Mark I ③				+½	+¾	+1		1/16		20	22½-23	5¼ @ 0°45'
1963-65 Super Minx Mark I, II, III Minx Series V ③				+¼	+½	+¾		⅛		20	22½-23	5¼ @ 0°45'
*Caster is not adjustable.												
JAGUAR												
1962-65 "E" Type ①, ⑨	+1½	+1¾	+2	0	+¼	+½	1/16		⅛			4
Rear Wheels ⑪				−1	−¾	−½						
MERCEDES-BENZ												
190c, 190Dc ⑯, ⑱	+3¼	+3½	+3¾	+⅓	+½	+⅔	1/32	5/64	7/64	20	20	5⅓-5⅔
220b, 220sb, 220SEb Sedan ⑯, ⑱	+2½	+2¾	+3	+⅓	+½	+⅔	1/32	5/64	7/64	20	20	5⅓-5⅔
220SEb Coupe and Conv. ⑯, ⑱	+3¼	+3½	+3¾	+⅓	+½	+⅔	1/32	5/64	7/64			5⅓-5⅔
230SL ⑭, ⑱	+3	+3¼	+3½	0		+⅔	1/32	5/64	7/64	20	20	5⅓-5⅔
M.G.												
Midget 1961-65 MK I, II N/A		+3			+¾		0		⅛			6¾
A N/A		+4		−½		+1		0				9-10½
B N/A		+7			+1		1/16		3/32			8
Sports Sedan N/A		+6			+½			−1/16•				10
Rear Wheels					+1			⅛				
•Toe-out.												
OPEL												
1958-63 Olympia Rekord and Caravan N/A	+1½		+2	+½		+1½	3/64		⅛			
1963-65 Kadett ①	0		+2	+½		+2	1/16		⅛	20	22½	
PEUGEOT												
1958-65 403 N/A	+1	+2	+3	−0°35'	+0°10'	+0°55'	3/32	1/16	15/32	20	23½	9¼-10¾
1961-65 404 N/A	+1	+2	+3	−¼	+½	+1¼	7/64	1/16	9/64	20	21½	9½-10
PORSCHE												
1951-56 356 N/A	+2	+2½	+3	+⅙	+⅔	+1⅙	3/64		⅛	16⅚-17⅚	20	4½
1956-59 356A N/A	+4½	+5	+5½	+⅙	+⅔	+1⅙	3/64		⅛	16½-17	20	4½
1959-64 356B, 1964-65 356C N/A	+4½	+5	+5½	+⅙	+⅔	+1⅙	3/64		⅛	16½-17⅚	20	4½
RENAULT												
1955-61 4CV, 1955-59 Dauphine N/A		+10			+1⅓		⅛		3/16			10 @ 0
1960-64 Dauphine, Gordini, Caravelle N/A		+10		−1	0	+1	⅛		3/16			11½ @ 0
1963-64 Caravelle "S" N/A	+7	+9	+11		+1		3/16		3/16			10¼ @ 0
1963-64 R8 N/A	+7	+9	+11		+1⅓		3/16	¼	5/16			9½ @ 0
SAAB												
1956-65 93, 93B, 93F, 95, 96; GT-750, -850 N/A	+1½	+2	+2½	+½	+¾	+1	3/64	5/64	⅛	20	21-24	6-8 @ 0
SIMCA												
1956-61 Aronde, 1962-63 Simca 5 ③	+1½	+2	+2½	+1	+1¼	+1½	3/32•	⅛•	5/32•			8-9 @ 0
1962-65 1000 Through body H17295 ①	+6½	+7	+7½	0	+½	+1	21/64	⅜	27/64			
Rear wheels ①				+3	+4	+5	0		1/64			
After body H17295 ①	+9	+10	+11	+½	+1	+1½	5/32	3/16	7/32			
Rear wheels ①				−½	0	+½	13/32	7/64	15/32			
*Caster variation between wheels must not exceed ¼°, camber variation must not exceed ½°. •Toe-out.												
SUNBEAM												
1959-65 Alpine Series; I, II, III, IV ③		+4°41'		+¼	+½	+¾		⅛		20	22¼-23¼	5-5½ @ 0
1956-62 Rapier, Rapier Series; II, III, IIIA ③	+1½	+1¾	+2	+¼	+½	+¾		⅛		20	22¼-23¼	5-5½ @ 0
1964-65 Imp N/A		+10			+1		1/16	3/16	5/16	20	20	10
Rear wheels N/A					−1¼			5/16				
TRIUMPH												
1954-62 TR-2, -3 N/A		0			+2			⅛		18¾	20	7 @ 2
w/Michelin X tires								1/16				
1963-65 TR-4 N/A		0•			+2			⅛		19¼	20	7 @ 2
w/Michelin X or Goodyear DFS tires								1/16				
•After Serial CT16389 (wire wheels CT16343), caster angle is 3°.												
VOLKSWAGEN												
1200 Sedan, convertible incl. Karmann-Ghia N/A	+2	+2½	+3	+⅙	+⅔	+1⅙	3/64		⅛	17¾-18¾•	20	4½
After chassis 1430497										17½-18½	20	
After chassis 2018788 N/A	+1¾	+2	+2¼				3/32		3/16			
*Maximum permissible camber difference between wheels, ½°. •Data shown for wheels turned to the left. If inside wheel is turned 20° to the right, outside wheel should turn 17° to 18°.												
VOLVO												
1957-65 PV444, -445; P210, PV544 ⑪	−¾		+¼	−¼		+½	0		⅛	20	21-23	5

toe-in adjustment

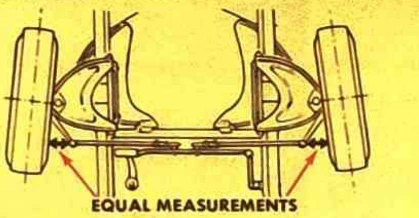
Toe-in is the last alignment adjustment to be set. By loosening clamp bolts and turning an adjusting sleeve, tie rod length can be changed. A tie rod *behind* the front wheels is lengthened to increase toe-in; a tie rod *ahead* of the wheels is lengthened to decrease toe-in.



When toe-in is adjusted, steering wheel position should be set so wheel spokes are centered when the car travels straight ahead. Where both tie rods are adjustable and steering wheel position is correct, toe-in can be set without disturbing the wheel by adjusting each tie rod an equal amount. If steering wheel position is incorrect, adjust toe-in first, then lengthen one tie rod and shorten the other in equal amounts to correct wheel position. If only one tie rod can be adjusted, changing the length of a steering rod may center the steering wheel.

toe-out on turns

The angle of a steering arm from brake backing plate to tie rod must be the same for both arms. It is this angle which causes front wheels to toe-out during a turn. If either or both arms are bent, toe-out on turns will be affected.



This angle is not adjustable, so a bent arm must be straightened or replaced. Since it is unlikely that both arms will be bent, a procedure has been developed for cars with steering linkage behind front suspension to indicate which arm needs attention. Follow this procedure only after caster, camber and toe-in have been adjusted.

1. Place each front wheel on a turning radius gauge.
2. Turn one front wheel exactly 20° to right.
3. Check degrees turned by other wheel against manufacturer's specifications.
4. If toe-in is incorrect, right steering arm is bent.
   - If steering linkage is ahead of front suspension, left steering arm is bent.
5. Repeat process to check opposite steering arm.

To further verify that a steering arm is bent, measure distance between the arm and brake backing plate at each wheel. Before replacing an arm, measure it against a new arm. After either replacing or straightening a steering arm, toe-in must be re-set.

LIGHT TRUCK SPECIFICATIONS

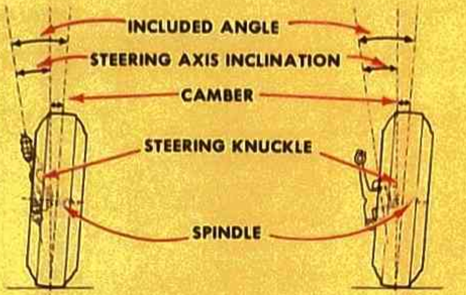
Circled numbers ① show adjustment method illustrated at end of section. N/A indicates not adjustable.

VEHICLE MODEL	CASTER* Degrees			CAMBER* Degrees			TOE IN (In inches)			TOE OUT ON TURNS Degrees		STEERING AXIS INCLINATION
	Low	Ideal	High	Low	Ideal	High	Low	Ideal	High	Outside Wheel	Inside Wheel	In Degrees at Degree Camber
CHEVROLET												
1955-57 3100, 3200 ⑯		+1½		+½		+1½	⅛		7/32	22½-23½	20	7.16@0
3600 ⑯		+3		+½		+1½	¼		5/16	22½-23½	20	7.16@0
3800 ⑯		+2¼		+½		+1½	¼		5/16	22½-23½	20	7.16@0
1958-59 3100, 3200 ⑯		+1½		+1¼		+1¾	⅛		7/32	22½-23½	20	6.16-8.16@0
3600 ⑯		+3		+1¼		+1¾	¼		5/16	22½-23½	20	6.16-8.16@0
3800 ⑯		+2¼		+1¼		+1¾	¼		5/16	22½-23½	20	6.16-8.16@0
1960-62 C10, -20, -30, -40 ③	+½	+1	+1½	0	+½	+1	⅛		¼	22½-23½	20	
1963-65 C10, P10• ③		+2°27′			+¼			3/16				
1963-65 C20, -30• ③		+2°20′			+¼			3/16				
1955-57 3400, 3500, 3700 ⑯		+2		+½		+1½	¼		5/16	22½-23½	20	7.16@0
1958-59 3400, 3500, 3700 ⑯		+2		+1¼		+1¾	¼		5/16	22½-23½	20	6.16-8.18@0
1960-63 P20, -30 ⑯		+2		+1¼		+1¾	⅛		5/16	22½-23½	20	7.5@0
1964-65 P20, -30 ⑯		+2			+1½		⅛		5/16	22½-23½	20	7¼@0
1964-65 Chevy Van ⑯		+3½			+1½		1/16		⅛			7¼@0
CORVAIR 95												
1961-62 Front ③	−2¼	−2½	−2¾	0	−¼	−½	1/16		3/16			
Rear N/A				−1½	−2	−2½	⅛		⅜			
1963-65 Front Panel ③	−1	−1¼	−1½	−½	−¼	0	1/16		3/16			4½@0
Ex. Panel												4@0
Rear							1/16		3/16			
*Vehicle at curb weight and with frame angle either at zero or compensated for in caster angle.												
DODGE												
1961 D-100 ⑯	+1½		+2½		+1½		0		⅛			4
D-200, P-200 ⑯		+1½			+1½		0		⅛			4
D-300, P-300 ⑯		+1½			+1½		0		⅛			7
1962-65 D-100 ⑯	+1½		+2½		+1½		0		⅛			4
D-200, P-200 ⑯		+1½			+1½		0		⅛			4
D-300, P-300 ⑯		+1½			2		0		⅛			7
1964-65 A-100 ⑯	+1½		+2½		+1½		0		⅛			4°@0
*Caster shown is for unloaded vehicle. When loaded, caster should be: D-100, 3½° to 4°; D-200, P-200, 3¼°; D-300, P-300, 3°.												
FORD												
1961 F-100, -250 ⑯		+3			+1			1/16				4@0
F-350, P-350 ⑯		+4			+1			1/16				4@0
1962-63 F-100, -250; P-100 ⑯	+2½	+3	+3½	+¾	+1	+1¼	1/16		3/16			4@0
1964 F-100, -250; P-100 ⑯	+3◇	+3½◇	+4◇	+⅜☆	+⅝☆	+⅞☆	1/16	⅛	3/16			4½@+⅝
1965 F-100, -250 ⑯	+4½*	+5*	+5½*	+¼▲	+⅝▲	+1▲	1/16	⅛	3/16			4@+⅝
P-100 ⑯	+3◇	+3½◇	+4◇	+⅜☆	+⅝☆	+⅞☆	1/16	⅛	3/16			4@+⅝
1962-63 F-350 ⑯	+3½	+4	+4½	+¾	+1	+1¼	1/16		3/16			4@0
1964 F-350 ⑯	+3½◇	+4◇	+4½◇	+⅜☆	+⅝☆	+⅞☆	1/16	⅛	3/16			4½@+⅝
F-350 ⑯	+3½◇	+4◇	+4½◇	+½☆	+¾☆	+⅞☆	1/16	⅛	3/16			4@+¾
1962-63 P-350 ⑯	+4	+4½	+5	+¾	+1	+1¼	1/16		3/16			4@0
1964 P-350 ⑯	+3½◇	+4½◇	+5½◇	+⅜☆	+⅝☆	+⅞☆	1/16	⅛	3/16			4½@+⅝
1965 P-350 ⑯	+3½◇	+4½◇	+5½◇	+⅜☆	+⅝☆	+⅞☆	1/16	⅛	3/16			4@+⅝
ECONOLINE 1961 ⑯	+2½*	+3½*	+4½*	+⅜#	+1#	+1½#	1/16	3/32	⅛	20	21½	7½@0
1962-63 ⑯	+4½	+5	+5½	+⅜	+⅝	+⅞	1/16	3/32	⅛	20	21½	7½@0
1964 ⑯	+4½◇	+5◇	+5½◇	+⅜☆	+½☆	+⅞☆	1/16	3/32	⅛			8@+½
1965 ⑯	+4½*	+5*	+5½*	+⅜#	+⅝#	+⅞#	1/16	3/32	⅛	20	21½	7½@+¾
Special Instructions for Checking Suspension Height *Maximum difference in caster between wheels, ⅜°. #Maximum difference in camber between wheels, ½° (¼° preferred). ▲Maximum difference in camber between wheels, ⅜°. ◇Maximum difference in caster between wheels, ½°. ☆Maximum difference in camber between wheels, ¼°.												
GMC												
1960-61 1000, 1500• ②	+½	+1	+1½	0	+½	+1	⅛		¼			
1962 1000, 1500• ②	+1¾		+2¾	−¼	+¼	+¾	0		⅛			8°30′@0
1963-65 1000, I-1000												
Ride Height◇ 3" ⑦	+3		+4	0		+1	3/16		¼			
3½" ⑦	+2½		+3½	0		+1	3/16		¼			
4" ⑦	+1¾		+2¾	−¼		+¾	3/16		¼			
4½" ⑦	+1¼		+2¼	−¼		+¼	3/16		¼			
1963-65 1500, 2500, I-1500, -2500												
Ride Height◇ 3" ⑦	+2½		+3½	−¼		+¾	3/16		¼			
3½" ⑦	+2		+3	−¼		+¾	3/16		¼			
4" ⑦	+1½		+2½	−½		+½	3/16		¼			
4½" ⑦	+¾		+1¾	−¾		+¼	3/16		¼			
HANDI-VAN 1964-65 ⑯		+3½			+1½		1/16		⅛			7°10′
•All adjustments must be measured with vehicle level and with curb weight of vehicle on the wheels. ◇Ride height is measured for left wheel and is distance between lower edge of front suspension cross member and mounting bracket for lower control arm rubber bumper. Frame angle must either be at zero or be compensated for in caster angle.												
INTERNATIONAL												
1957-65 A-100, -110; B-100, -110; C-110, -900, -1100 ⑯		+1			+2		⅛		3/16			4
1957-65 A-120, -130; AM-120, -130; B-120, -130; C-120, -130, -1200, -1300 ⑯		+1			+2		⅛		3/16			4
1961-65 Scout 80 (4x2) ⑯		+½		+1		+1½		⅛				6½-7½
(4x4) ⑯		0			+1½		1/16		3/32			7½
1961-65 C-100, -1000 ⑦, ⑯	−1½	−2	−2½	+½	+1	+1½	⅛		5/16			8
'JEEP'												
1963-65 Series J-200, -300 2WD and 4WD												
Independent suspension ⑦, ⑬	+3¾		+4¾	+1¾		+2¼	5/64		3/32	20	20	7½
Solid front axle ⑯		+3			+1½		5/64		3/32	20	20	

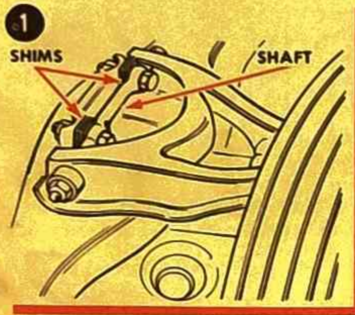
steering axis inclination

The last check when aligning front wheels is steering axis inclination—which is *not adjustable*. If this angle doesn't meet the manufacturer's specification, either the steering knuckle or its spindle is bent and must be replaced.

Steering axis inclination and camber are inseparable. Any change in one will change the other an equal amount. But there is an *unchanging* factor: the included angle built into the steering knuckle forging. Thus, if the knuckle is bent, a correct camber setting will result in an incorrect steering axis inclination—and vice-versa.


INCLUDED ANGLE
STEERING AXIS INCLINATION
CAMBER
STEERING KNUCKLE
SPINDLE

Check for bends in steering knuckles by measuring degrees of (1) steering axis inclination, and (2) caster. Add these figures if caster is positive—or subtract (2) from (1) if caster is negative—to obtain the included angle built into steering knuckles. This angle must be the same for both wheels; if it is not, one steering knuckle is bent. If the correct steering axis inclination is not known, measure both steering knuckles against a new part and replace the bent knuckle.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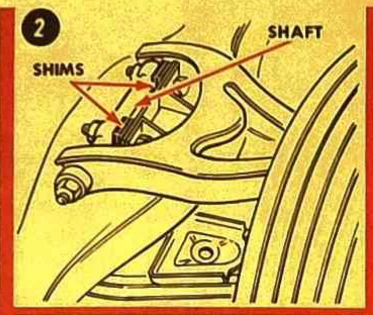
SHIMS
SHAFT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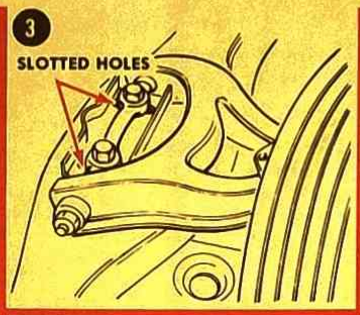
SHAFT
SHIMS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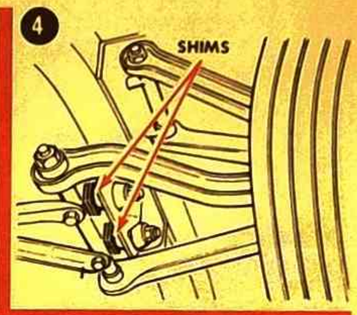
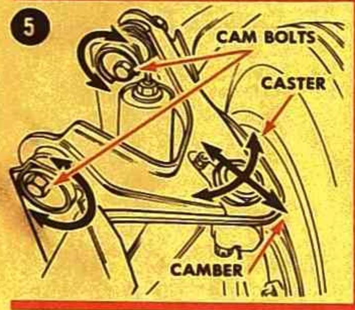
SLOTTED HOLES

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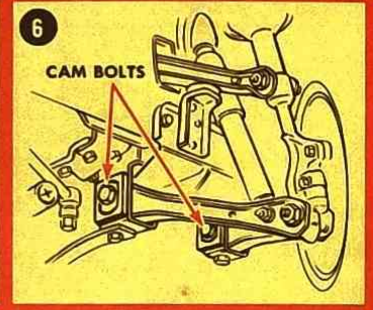
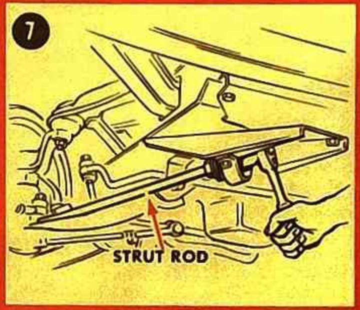
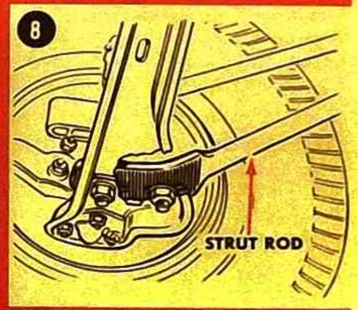
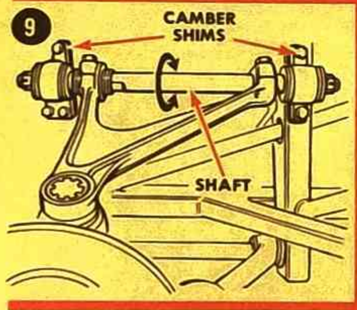
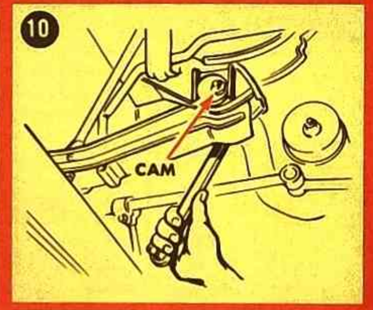
CAM BOLTS
CASTER
CAMBER

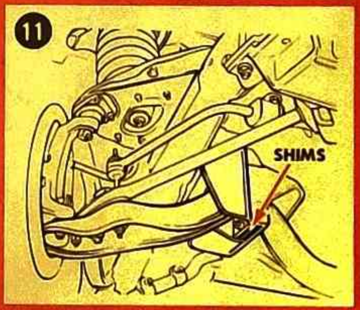


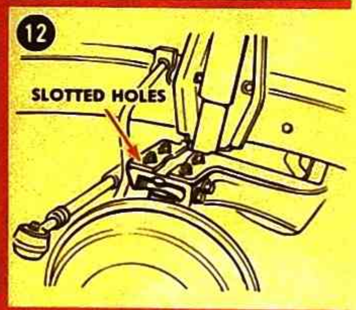





9
CAMBER SHIMS
SHAFT



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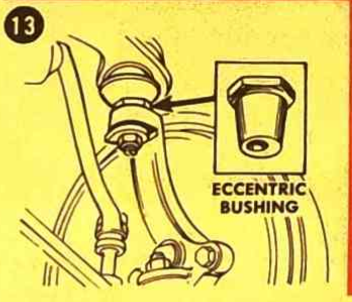
SLOTTED HOLES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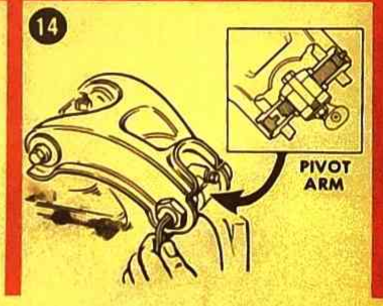
ECCENTRIC BUSHING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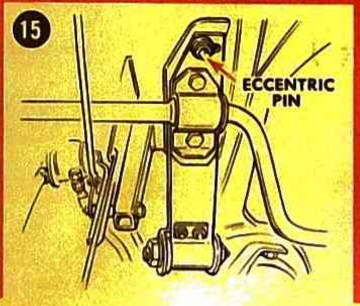
PIVOT ARM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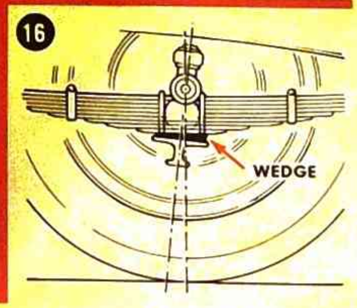
ECCENTRIC PIN



BUICK V-6
1962 Special

HOOD RELEASE: Front

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	42

COMPRESSION PRESSURE
(at cranking speed with throttle open) psi

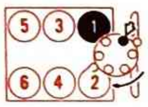
Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS
AC 44S
Gap: .035"
Torque: 25 ft. lb.

IGNITION POINTS
Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER
Delco
Capacity: .18-.23 mfd

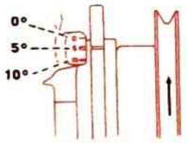
Cylinder Numbering Sequence



Firing Order: 1, 6, 5, 4, 3, 2

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set engine speed to 1050 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
7½° at 1050 rpm (preferred); or 5° at 400 rpm may be used

FUEL PUMP
AC model HQ
Pressure: 4-5¼ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1	index	index

ENGINE IDLE SPEED
Manual Trans. 525 rpm*
Auto. Trans. 525 rpm in NEUTRAL*
Air Cond. 575 rpm in NEUTRAL*
*Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES
Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	12	10½

Cooling system pressure, 15 pounds

☆ **Fuel Filter** ....Clean glass bowl
Air conditioned models only
12 Air conditioned models....Replace element
12 All other models...........Clean element
Located at carburetor inlet
More frequent service may be necessary if contaminated fuel is used

☆ **Power Steering Reservoir**...............**AF**
Fill to FULL mark on dipstick, when oil is warm

☆ **Manual Steering Gear** (plug)...........90 **MP**

Crankcase Dipstick..............Check level

4 **Oil Fill Cap**................Wash and oil **MO**

☆ **Brake Master Cylinder** (cap)..............**HB**
Fill to ⅛ inch below top of fill hole

☆ **Front Suspension and Steering Linkage**..........(17 fittings) **CL**

☆ **Clutch Release Equalizer Shaft**............**CL**

TRANSMISSION, Manual .MP, MO
90MP, or 40 or 50MO
☆ Maintain level to fill plug hole
CAPACITY 3-speed, 2¼ pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

10 **Propeller Shaft Spline** (plug).............**LM**
Remove plug. Use special adapter

DIFFERENTIAL ....90 MP*
80 grade when consistently below −10°
☆ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723

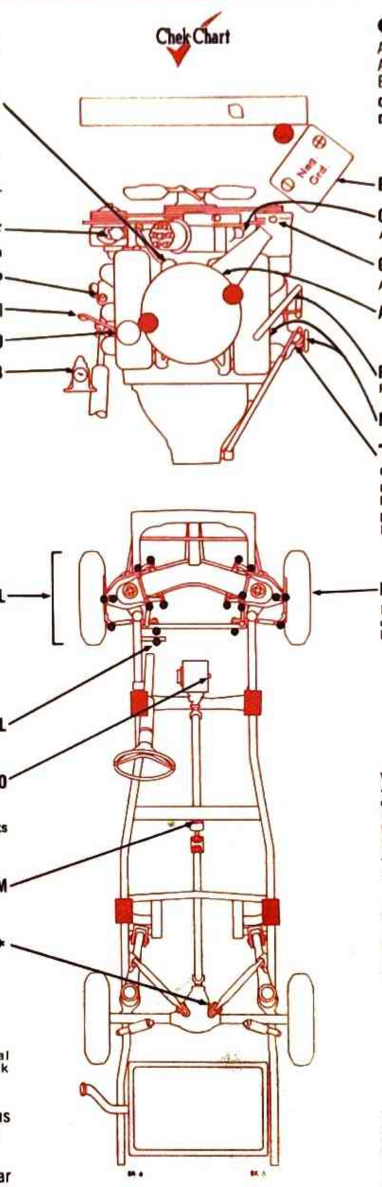
GAS TANK ....Gallons
All models 16

TIRES

..........Pressure	Front	Rear
6.00-15	22	22*
6.50-13	22	22*
7.00-13	22	22*

* Estate Wagon and heavily loaded cars, 26
For temperatures below +32° increase pressure 2 pounds

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.......................Test and fill ☆

Oil Filter (under car)..................Replace 4
Add extra quart oil

Generator (oil cup)...............10W **MO** ☆
Add only 8 to 10 drops

Air Cleaner Element................Service
Polyurethane....Wash and oil 10W-30 **MO** 8

PCV System Valve.........................**CC** 8
Remove and clean valve and hose

Manifold Heat Control Valve Shaft..........**MH** ☆

TRANSMISSION, Automatic ..AF
Check level, engine idling, PARK position........☆
CAPACITY 6 quarts, refill approx. 2 quarts
Do not overfill
DRAIN and REFILL................................25
Remove oil pan

Front Wheel Bearings............Repack **WB** 10
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

BRAKE ADJUSTMENT
With the brakes cold, if the brake pedal can be depressed to within 2" (3" for high-speed driving) of floorboard with standard brakes or within 1" (1½" for high-speed driving) of floorboard with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:
1. Using suitable tool, turn star wheel adjuster to expand shoes until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjuster 15 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS
☆ Every 1,000 miles
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
5 Every 5,000 miles
8 Every 8,000 miles
10 Every 10,000 miles
12 Every 12,000 miles or 12 months
25 Every 25,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
WB	Wheel Bearing Grease

BUICK V-6
1963 Special

HOOD RELEASE: Front

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44

COMPRESSION PRESSURE
(at cranking speed with throttle open) psi

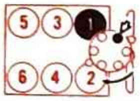
Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS
AC 44S; high-speed driving or hauling trailers, 42 Commercial
Gap: .035"
Torque: 30 ft. lb.

IGNITION POINTS
Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER
Delco
Capacity: .18-.23 mfd

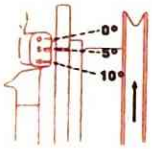
Cylinder Numbering Sequence



Firing Order: 1, 6, 5, 4, 3, 2

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set engine speed to 1050 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
7½° at 1050 rpm (preferred); or 5° at 400 rpm may be used

FUEL PUMP
AC model HQ
Pressure: 4-5¼ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
ROCHESTER 2-bbl. 2GC	1	index	1 rich

ENGINE IDLE SPEED
Manual Trans. 550 rpm*
Auto. Trans. 550 rpm in DRIVE*
Air Cond. 550 rpm in DRIVE with unit turned OFF*
*Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES
Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	12	10½

Cooling system pressure, 15 pounds

12 **Fuel Filter** ....Clean
Located at carburetor inlet
More frequent service may be necessary if contaminated fuel is used

★ **Power Steering Reservoir**............... **PS**
Fill to FULL mark on dipstick, when oil is warm

★ **Manual Steering Gear** (plug)..........90 **MP**

Crankcase Dipstick..............Check level

12 **Oil Fill Cap**................Wash and oil **MO**

★ **Brake Master Cylinder** (cap).............. **HB**
Fill to ⅛ inch below top of reservoir

6 **Front Suspension**............(12 fittings) **CL**
Note: If Buick Spec. No. 742 is not used lubrication interval should not exceed 2,000 miles

C **Steering Linkage**...............(4 plugs) **CL**
If squeaks develop, remove plugs, install fittings and lubricate with Buick Spec. No. 742. Thereafter lubricate every 6,000 miles or 6 months; if Buick Spec. No. 742 is not used, lubrication interval should not exceed 2,000 miles

TRANSMISSION, Manual. MP, MO
90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2¼ pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

12 **Propeller Shaft Spline** (plug).............**LM**
Remove plug. Use special adapter

★ **Constant Velocity Joint**.................**LM**
Depressed-type fitting, use special adapter
Early models, no lubrication

DIFFERENTIAL ....90 MP*
80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723

GAS TANK ....Gallons

All models	16

TIRES

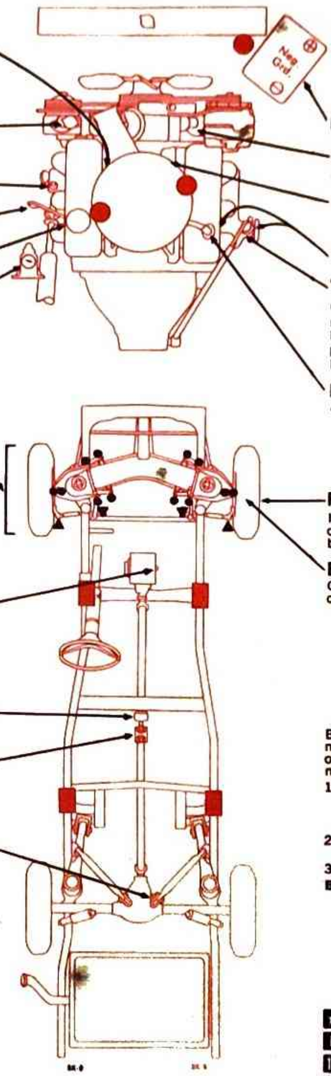
TIRES..........Pressure	Front	Rear
6.00-15	22	22*
6.50-13	22	22*
7.00-13	22	22*

* Sedan or Coupe for long distances with heavily loaded trunk, 200 pounds or more, and station wagon, 28

For temperatures below +32° increase pressure 2 pounds

★ Rotate tires, Method A, then balance wheels

Chek-Chart



CRANKCASE

CRANKCASE..............		"MS" MO
Above +32°..................	20,20W	10W-30
Above 0°....................	10W	10W-30
Below 0°....................	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.......................Test and fill ★

Oil Filter (under car)...............Replace **6**
Add extra quart oil

Air Cleaner Element................Service
Polyurethane...........Wash and oil **MO** **12**

Manifold Heat Control Valve Shaft.........**MH** ★

TRANSMISSION, Automatic. .AF
Check level, engine idling, PARK position........ ★
CAPACITY 6 quarts, refill approx. 2 quarts
Do not overfill
DRAIN and REFILL.......................... **24**
Remove oil pan

PCV System Valve.................Replace **6**
Also remove and clean hose

Front Wheel Bearings............Repack **WB** **C**
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels). **BL** **18**
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT
Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:
1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

🟥 Position for lift adapter
▲ Prepacked bearing
• Lubrication fitting
● Cooling system drain

KEY TO INTERVALS
★ Every 6,000 miles
6 Every 6,000 miles or 6 months
12 Every 12,000 miles
18 Every 18,000 miles or 18 months
24 Every 24,000 miles
C Conditional service
Lubricate steering linkage only if squeaks develop
Repack front wheel bearings only when drums are removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
CL	Chassis Lubricant Buick Specification No. 742
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

BUICK V-6

1964-65 Special and Skylark

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) **psi**

Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

AC 44S; high-speed driving or hauling trailers, 42 Commercial
Gap: .035"
Torque: 30 ft. lb.

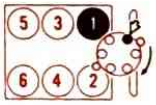
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

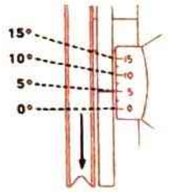


Firing Order: 1, 6, 5, 4, 3, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set engine speed to idle rpm
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 5°

FUEL PUMP

AC model JU
Pressure: 4-5¼ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
ROCHESTER 1-bbl. 1BC	2	index	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm*
Auto. Trans. 550 rpm* in DRIVE
Air Cond. 600 rpm* in DRIVE with unit turned OFF
* Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	10¾	10
With air cond.	11¼	

Cooling system pressure, 15 pounds

24 Manual Steering Gear .... 90 MP
Fill thru top cover cap screw marked "Check Lube"

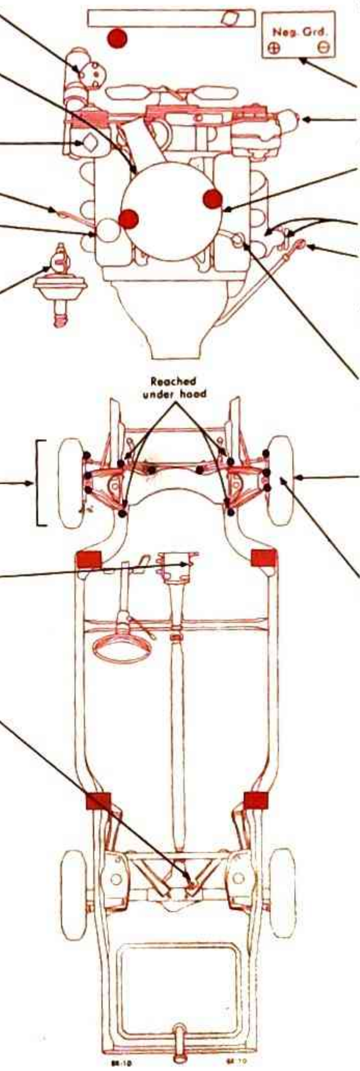
12 Fuel Filter .... Clean
Located at carburetor inlet
More frequent service may be necessary if contaminated fuel is used

★ Power Steering Reservoir .... PS
Fill to level mark, when oil is warm

Crankcase Dipstick .... Check level

★ Oil Fill Cap .... Wash and oil MO
If cap is sealed type, wash and oil PCV system breather filter on valve cover. Also remove and clean hose

★ Brake Master Cylinder (cap) .... HB
Fill to ⅛ inch below top of reservoir



6 Front Suspension and Steering Linkage .... (12 fittings) CL

TRANSMISSION, Manual . MP, MO

90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

DIFFERENTIAL .... 90 MP*

80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag attached to rear cover
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723, or equivalent

GAS TANK .... Gallons

All models 20

TIRES

Pressure	Front	Rear
6.50-14, 7.00-14	24●	24*●
Station wagons: 7.00-14, 7.50-14	24●	28●
6.95-14, 7.35-14, 7.75-14	24†	24†
Station Wagons: 7.35-14, 7.75-14	22‡	28‡

* Sedan or coupe for long distances with heavily loaded trunk, 200 pounds or more, **28-32**
● For temperatures below +32° increase pressure 2 pounds
† Full load, front **28**, rear **30**
‡ Full load, front **24**, rear **30**

★ Rotate tires, Method A
12 Check wheel balance

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter (under car) .... Replace 6
Add extra quart oil

Air Cleaner Element .... Service
Polyurethane .... Wash and oil MO 12

Manifold Heat Control Valve Shaft .... MH ★

TRANSMISSION, Automatic . . AF

Check level, engine idling, PARK position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	2	2½

DRAIN and REFILL 24
Remove oil pan. Replace transmission oil filter
Under severe or heavy-duty service, drain every 12,000 miles

PCV System Valve .... Replace
Also remove and clean hose
1964 6 1965 12
When late type valve is installed on 1964 models, replace every 12,000 miles

Front Wheel Bearings .... Repack WB C
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off 1/12 to 1/6 turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels) . BL 18
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

▬ Position for lift adapter
• Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

★ Every 6,000 miles
6 Every 6,000 miles or 6 months
12 Every 12,000 miles
18 Every 18,000 miles
24 Every 24,000 miles
C Conditional service
Repack front wheel bearings only when drums are removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Buick Specification No. 742 or equivalent. If conventional chassis lubricant is used, interval should not exceed 2,000 miles
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

UICK V-8
961-62 Special and Skylark

1961

1962

HOOD RELEASE: Front

TUNE-UP DATA
See Service Instructions for Procedure

ATTERY	AABM Group No.	Amp. Hrs.
1	22F	42

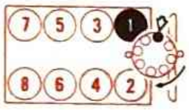
OMPRESSION PRESSURE
t cranking speed with throttle open) psi
west reading cylinder must be more than 75%
the highest reading cylinder

PARK PLUGS
C: 2-bbl. carb., 45FFS; 4-bbl. carb., Skylark,
FFS
p: .035"
rque: 15-20 ft. lb.*
Use motor oil on threads

NITION POINTS
lco
p: .016"
vell angle: 29°-31° (30° preferred)

ONDENSER
lco
pacity: .18-.23 mfd

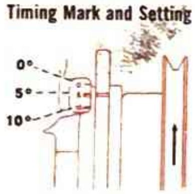
Cylinder Numbering Sequence



ring Order: 1, 8, 4, 3, 6, 5, 7, 2

MING PROCEDURE
Bring engine to operating temperature
Disconnect distributor vacuum line and tape manifold opening
Connect tachometer
Connect timing light to No. 1 spark plug or distributor cap tower
Set engine speed to 1050 rpm, transmission in NEUTRAL
Observe timing at crankshaft damper and turn distributor to obtain recommended setting
Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



ing Setting (Before Top Dead Center):
at 1050 rpm (preferred); or 5° at 400 rpm
be used

EL PUMP
model HQ
ssure: 4-5¼ lb. at idle rpm
me: Not required

RBURETOR ADJUSTMENT

HESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
. 2GC	1½*	index	index
. 4GC	1½	index	index

52, 1 turn

INE IDLE SPEED
ual Trans. 525 rpm*
Trans. 525 rpm in NEUTRAL*
ond. 575 rpm in NEUTRAL*
e certain idle compensator valve is closed,
equipped

VE CLEARANCES
aulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13½	12

Cooling system pressure, 15 pounds

Fuel Filter
★ Glass bowl .... Clean
[12] Element .... Replace
More frequent service may be necessary if contaminated fuel is used

★ **Power Steering Reservoir** .... AF
Fill to FULL mark on dipstick, when oil is warm

[4] **Oil Fill Cap** .... Wash and oil **MO**

Crankcase Dipstick .... Check level

★ **Manual Steering Gear** (plug) .... 90 **MP**

★ **Brake Master Cylinder** (cap) .... **HB**
1961, fill to ½-1 inch below top of fill hole; 1962, to ⅛ inch below top of fill hole

★ **Front Suspension and Steering Linkage** .... (17 fittings) **CL**

★ **Clutch Release Equalizer Shaft** .... **CL**

TRANSMISSION, Manual . MP, MO
90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2¼ pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

[10] **Propeller Shaft Spline** (plug) .... **LM**
Remove plug. Use special adapter

DIFFERENTIAL .... 90 MP*
80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723

GAS TANK .... Gallons

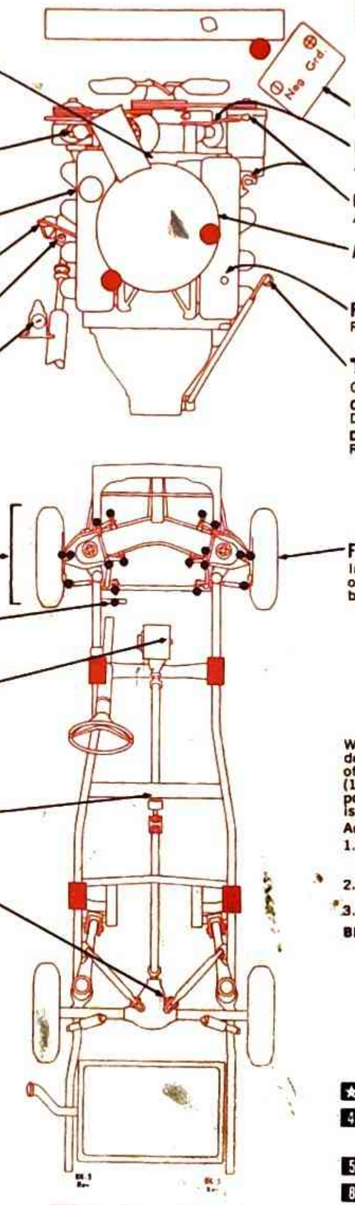
All models	16

TIRES

Pressure	Front	Rear
6.00-15	22	22*
6.50-13	22	22*
7.00-13	22	22*

* Estate Wagon and heavily loaded cars, 26
For temperatures below +32° increase pressure 2 pounds

[5] Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter (under car) .... Replace [4]
Add extra quart oil

Generator (1 or 2 oil cups) .... 10W **MO** ★
Add only 8 to 10 drops to each oil cup

Air Cleaner Element .... Service
Polyurethane ..... Wash and oil 10W-30 **MO** [8]

PCV System Valve .... **CC** [8]
Remove and clean valve and hose

TRANSMISSION, Automatic . . AF
Check level, engine idling, PARK position .... ★
CAPACITY 6 quarts, refill approx. 2 quarts
Do not overfill
DRAIN and REFILL .... [25]
Remove oil pan

Front Wheel Bearings .... Repack **WB** [10]
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

BRAKE ADJUSTMENT
With the brakes cold, if the brake pedal can be depressed to within 2" (3" for high-speed driving) of floorboard with standard brakes or within 1" (1½" for high-speed driving) of floorboard with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Using suitable tool, turn star wheel adjuster to expand shoes until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjuster 15 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS
★ **Every 1,000 miles**
[4] **Every 4,000 miles**
Oil Filter: Every 4,000 miles or 6 months
[5] **Every 5,000 miles**
[8] **Every 8,000 miles**
[10] **Every 10,000 miles**
[12] **Every 12,000 miles or 12 months**
[25] **Every 25,000 miles**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
WB	Wheel Bearing Grease

BUICK V-8

1963 Special and Skylark

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

AC: 2-bbl. carb., 45FFS; 4-bbl. carb., Skylark, 44FFS; high-speed driving or hauling trailers, 42FF
Gap: .035"
Torque: 20 ft. lb.*
* Use motor oil on threads

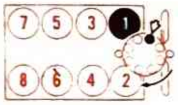
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

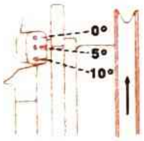


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug or distributor cap tower
5. Set engine speed to 1050 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 7½° at 1050 rpm (preferred); or 5° at 400 rpm may be used

FUEL PUMP

AC model HQ
Pressure: 4-5¼ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1	index	index
4-bbl. 4GC	1½	index	index

ENGINE IDLE SPEED

Manual Trans. 500 rpm*
Auto. Trans. 500 rpm in DRIVE*
Air Cond 550 rpm in DRIVE with unit turned OFF*
*Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13½	12

Cooling system pressure, 15 pounds

★ **Power Steering Reservoir** .... PS
Fill to FULL mark on dipstick, when oil is warm

Fuel Filter
12 Standard V-8 .... Clean
Located at carburetor inlet
24 Others .... Replace
More frequent service may be necessary if contaminated fuel is used

Crankcase Dipstick .... Check level

★ **Manual Steering Gear** (plug) .... 90 MP

12 **Oil Fill Cap** .... Wash and oil MO

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅛ inch below top of reservoir

6 **Front Suspension** .... (12 fittings) CL
Note: If Buick Spec. No. 742 is not used lubrication interval should not exceed 2,000 miles

C **Steering Linkage** .... (4 plugs) CL
If squeaks develop, remove plugs, install fittings and lubricate with Buick Spec. No. 742. Thereafter lubricate every 6,000 miles or 6 months; if Buick Spec. No. 742 is not used, lubrication interval should not exceed 2,000 miles

TRANSMISSION, Manual . MP, MO

90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, **2¼ pints**; 4-speed, **2½ pints**
DRAIN and REFILL Not recommended

12 **Propeller Shaft Spline** (plug) .... LM
Remove plug. Use special adapter

★ **Constant Velocity Joint** .... LM
Depressed-type fitting, use special adapter
Early models, no lubrication

DIFFERENTIAL .... 90 MP*

80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723

GAS TANK .... Gallons

All models 16

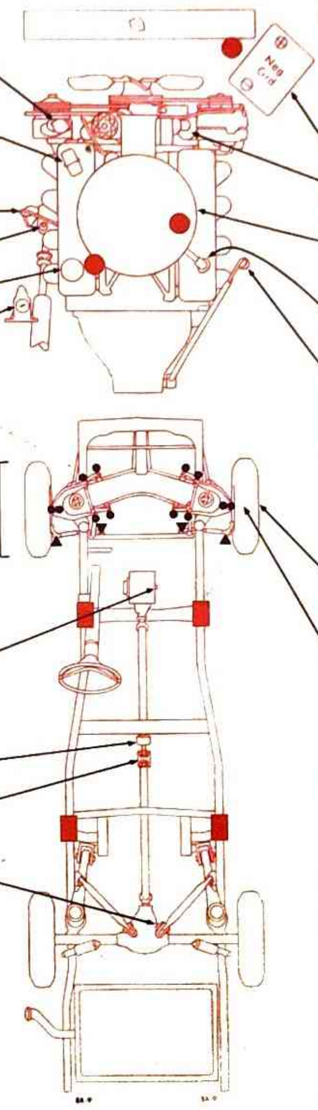
TIRES

Pressure	Front	Rear
6.00-15	22	22*
6.50-13	22	22*
7.00-13	22	22*

* Sedan or Coupe for long distances with heavily loaded trunk, 200 pounds or more, and station wagon, **28**

For temperatures below +32° increase pressure 2 pounds

★ Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
• Lubrication fitting
● Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter (under car) .... Replace 6
Add extra quart oil

Air Cleaner Element .... Service
Polyurethane .... Wash and oil MO 12

PCV System Valve .... Replace 6
Also remove and clean hose

TRANSMISSION, Automatic . AF

Check level, engine idling, PARK position .... ★
CAPACITY 6 quarts, refill approx. **2 quarts**
Do not overfill
DRAIN and REFILL 24
Remove oil pan

Front Wheel Bearings .... Repack WB C
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels) . BL 18
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 6,000 miles
6 Every 6,000 miles or 6 months
12 Every 12,000 miles
18 Every 18,000 miles or 18 months
24 Every 24,000 miles
C Conditional service
Lubricate steering linkage only if squeaks develop
Repack front wheel bearings only when drums are removed for other service

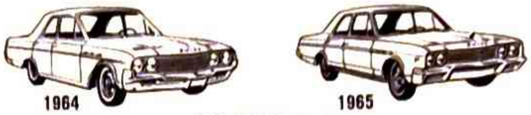
FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
CL	Chassis Lubricant Buick Specification No. 742
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

BUICK V-8

1964-65 Special and Skylark



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

1964: AC 44FFS; high-speed driving or hauling trailers, 42FF
1965: AC 44S; high-speed driving or hauling trailers, 42 Commercial
Gap: .035"
Torque: 1964, 20 ft. lb.*; 1965, 30 ft. lb.
* Use motor oil on threads

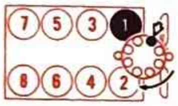
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

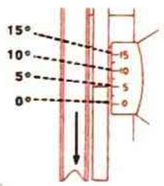


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug or distributor cap tower
5. Set engine speed to idle rpm
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

AC model JU
Pressure: 4-5¼ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4 lb.-AFB	¾	index	index
ROCHESTER			
2-bbl. 2GC	1½	index	2 rich*
4-bbl. 4GC	1½	index	2 rich

* 1965 index

ENGINE IDLE SPEED

Manual Trans. 550 rpm*
Auto. Trans. 550 rpm* in DRIVE
Air Cond. 600 rpm* in DRIVE with unit turned OFF
* Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ... Quarts

	With Heater	Without Heater
All models	13¾	12¾
With air cond.	15	...

Cooling system pressure, 15 pounds

[24] **Manual Steering Gear** ... 90 MP
Fill thru top cover cap screw marked "Check Lube"

[24] **Fuel Filter** ... Replace
More frequent service may be necessary if contaminated fuel is used

★ **Power Steering Reservoir** ... PS
Fill to level mark, when oil is warm

[12] **Choke Housing Vent Filter** 1964 only ... Clean

Crankcase Dipstick ... Check level

★ **Oil Fill Cap** ... Wash and oil MO
If cap is sealed type, wash and oil PCV system breather filter on valve cover. Also remove and clean hose

★ **Brake Master Cylinder** (cap) ... HB
Fill to ⅛ inch below top of reservoir

[6] **Front Suspension and Steering Linkage** ... (12 fittings) CL

TRANSMISSION, Manual . MP, MO

90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

DIFFERENTIAL ... 90 MP*

80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag attached to rear cover
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723, or equivalent

GAS TANK ... Gallons

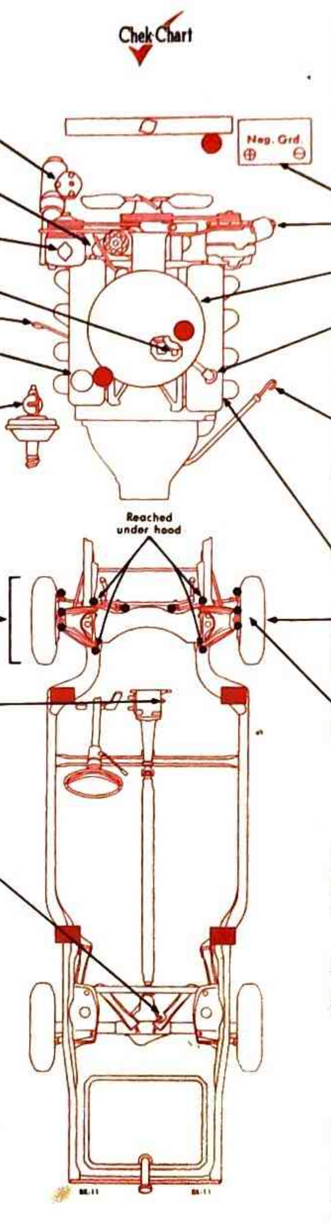
All models ... 20

TIRES ... Pressure

	Front	Rear
6.50-14, 7.00-14	24●	24*●
Station wagons: 7.00-14, 7.50-14	24●	28●
7.35-14, 7.75-14	24†	24†
Station wagons: 7.35-14, 7.75-14	22‡	28‡

* Sedan or coupe for long distances with heavily loaded trunk, 200 pounds or more, 28-32
● For temperatures below +32° increase pressure 2 pounds
† Full load, front 28, rear 30
‡ Full load, front 24, rear 30

★ Rotate tires, Method A
[12] Check wheel balance



CRANKCASE ... "MS" MO

Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery ... Test and fill ★

Oil Filter (under car) ... Replace [6]
Add extra quart oil

Air Cleaner Element ... Service
Polyurethane ... Wash and oil MO [12]

PCV System Valve ... Replace
Also remove and clean hose
1964 [6] 1965 [12]
When late type valve is installed on 1964 models, replace every 12,000 miles

TRANSMISSION, Automatic . . AF

Check level, engine idling, PARK position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	2	2½

DRAIN and REFILL ... [24]
Remove oil pan. Replace transmission oil filter
Under severe or heavy duty service, drain every 12,000 miles

Manifold Heat Control Valve Shaft ... MH ★
1965 only

Front Wheel Bearings ... Repack WB [C]
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off 1/12 to 1/6 turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels) . BL [18]
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

■	Position for lift adapter
•	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★ Every 6,000 miles
[6] Every 6,000 miles or 6 months
[12] Every 12,000 miles
[18] Every 18,000 miles
[24] Every 24,000 miles
[C] Conditional service
Repack front wheel bearings only when drums are removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Buick Specification No. 742 or equivalent. If conventional chassis lubricant is used, interval should not exceed 2,000 miles
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

BUICK V-8

1961-62 All Except Special and Skylark

1961

1962

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	60	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

AC: 44S; high-speed operation, 42; low speed, 45S
Gap: .035"
Torque: 25-30 ft. lb.

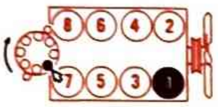
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

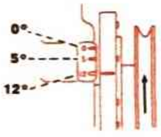


Firing Order: 1, 2, 7, 8, 4, 5, 6, 3

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect vacuum hose and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug or distributor cap tower
5. Set idle speed to 400 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum hose and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
12° at 400 rpm

FUEL PUMP

AC model HE
Pressure: 4¾-6½ lb. at idle rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
CARTER		
4-bbl. AFB	¾	index
ROCHESTER		
2-bbl. 2GC	1½	1 rich*
4-bbl. 4GC	1½	index
STROMBERG		
2-bbl. WW-2	1½	index

* 1962, index

ENGINE IDLE SPEED

525 rpm in NEUTRAL or PARK*
Air Cond. 575 rpm in NEUTRAL*
*Make certain idle compensator valve is closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	18½	17

Cooling system pressure, 15 pounds

Fuel Filter
★ Glass bowl ....Clean
[12] Element ....Replace
More frequent service may be necessary if contaminated fuel is used

★ **Battery**........................Test and fill

★ **Power Steering Reservoir**................AF
Fill to level mark, when oil is warm

[8] **Air Cleaner Element**................Service
Polyurethane....Wash and oil 10W-30 **MO**

★ **Manual Steering Gear** (plug)..........90 **MP**

★ **Brake Master Cylinder** (cap)..............**HB**
1961, fill to ½-1 inch below top of fill hole; 1962, to ⅛ inch below top of fill hole

★ **Distributor Shaft** (oil cup) 1961......10W **MO**

★ **Front Suspension and Steering Linkage**...(8, 9 or 13 fittings) **CL**

[10] **Propeller Shaft Spline**..................**LM**
Rotate shaft until plug aligns with hole in frame. Remove plug. Use special adapter

[5] **Constant Velocity Joint**..................**LM**
Rotate shaft until depressed type fitting aligns with hole in frame. Use special adapter

DIFFERENTIAL ....90 MP*

80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723

GAS TANK ....Gallons

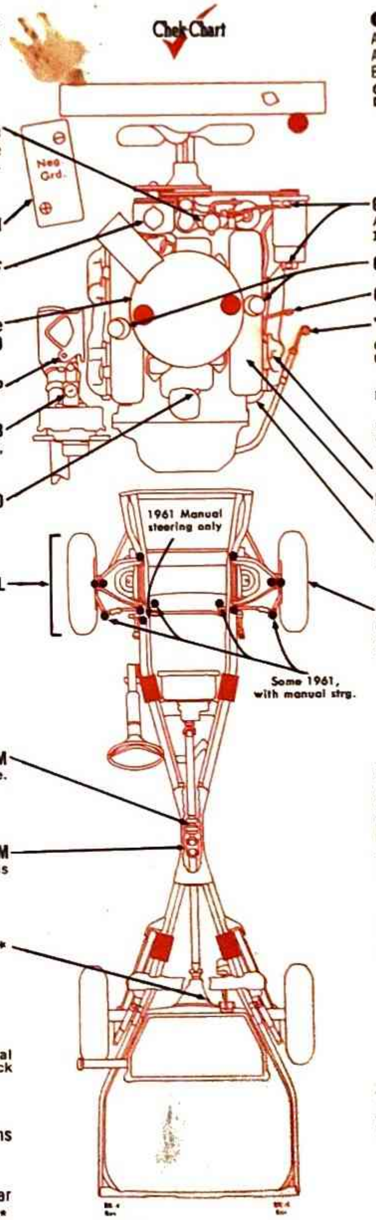
All models 20

TIRES..........Pressure

	Front	Rear
7.60-15 LeSabre, Invicta...........	24	24*
8.00-15 Electra, Invicta...........	24	24

* Estate Wagon and heavily loaded cars, 28
For temperatures below +32° increase pressure 2 pounds

[5] Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Generator (1 or 2 oil cups)..........10W **MO** ★
Add only 8 to 10 drops to each oil cup
1962 with alternator, no lubrication

Oil Fill Caps..............Wash and oil **MO** [4]

Crankcase Dipstick..............Check level

TRANSMISSION, Automatic ..AF

Check level, engine idling, PARK position........ ★

CAPACITY, quarts	Initial Refill	Total Refill
1961	3	12
1962	2½	2½

DRAIN and REFILL
1961 [25] 1962 [24]
1961, remove 2 converter plugs, disconnect fill pipe
1962, disconnect fill pipe. Do not drain converter

Manifold Heat Control Valve Shaft.......**MH** ★

PCV System Valve........................**CC** [8]
Remove and clean valve and hose

Oil Filter (under car)................Replace [4]
Add extra quart oil

Front Wheel Bearings............Repack **WB** [10]
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off 1/12 to 1/6 turn and insert cotter pin

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed to within 2" (3" for high-speed driving) of floorboard with standard brakes or within 1" (1½" for high-speed driving) of floorboard with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Using suitable tool, turn star wheel adjuster to expand shoes until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjuster 15 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 1,000 miles
[4] Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
[5] Every 5,000 miles
[8] Every 8,000 miles
[10] Every 10,000 miles
[12] Every 12,000 miles or 12 months
[24] Every 24,000 miles
[25] Every 25,000 miles

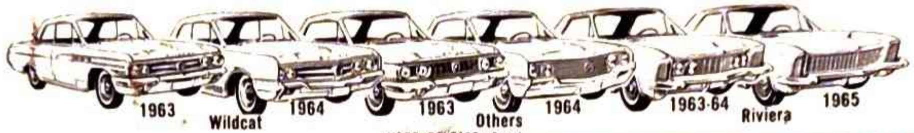
FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CC Carburetor Cleaner
CL Chassis Lubricant
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM Lithium Grease, EP No. 1
MH Manifold Heat Control Valve Solvent
Buick Part No. 980108
MO Motor Oil
MP Multi-Purpose Gear Lubricant
Standard differential only: Specification MIL-L-2105B
WB Wheel Bearing Grease

BUICK V-8

1963-64 All Except Special and Skylark
1965 Riviera



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All except 1964 LeSabre 300 eng.	27	70
1964 LeSabre 300 eng.	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) **psi**
Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

AC 44S except 1964 LeSabre 300 eng., 44FFS
All except 1964 LeSabre 300 eng., for high-speed driving or hauling trailers, 42 Commercial
Gap: .035"
Torque: 30 ft. lb.

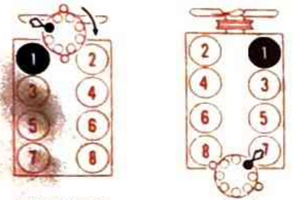
IGNITION POINTS

Delco Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence



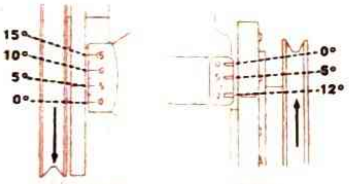
1964 LeSabre 300 engine **Others**

Firing Order:
1964 LeSabre 300 eng. **1, 8, 4, 3, 6, 5, 7, 2**
Others **1, 2, 7, 8, 4, 5, 6, 3**

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug or distributor cap tower
5. Set engine to idle speed
6. Observe timing at crankshaft damper, turn distributor to obtain specified setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



1964 LeSabre 300 engine **Others**

Timing Setting (Before Top Dead Center):
1963: Man. Trans. 5°; Auto. Trans. 12°; at idle
1964: 300 eng. at 550 rpm, 2½°
1964-65: 401, 425 engs. at 500 rpm, 2½°
425 eng. with dual 4-bbl. and Auto. Trans., at 500 rpm, 12°

FUEL PUMP

AC model HE except 1964 LeSabre 300 eng., model JU
Pressure: 4¼-6½ lb. at idle rpm except 1964 LeSabre 300 eng., 4-5¼ lb. at idle rpm; at carburetor height
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
2 4-bbl. AFB	2	index	index
4-bbl. AFB	¾	index	index
ROCHESTER			
2-bbl. 2GC	1½	index	index*
4-bbl. 4GC	1½	index	index**

* 1964, 2 rich ** 1964 LeSabre 300 eng. 2 rich

ENGINE IDLE SPEED

1963: 500 rpm* (in DRIVE)
Air Cond. 550 rpm* (in DRIVE), unit OFF
1964: 300 eng., 550 rpm* (in DRIVE)
Air Cond. 600 rpm* (in DRIVE), unit OFF
1964-65: 401, 425 engs. 500 rpm* (in DRIVE)
Air Cond. 550 rpm* (in DRIVE), unit OFF
* Idle compensator valve closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
LeSabre, except Estate Wagons	13¾*	12¾
All others	18½*	17

* With air conditioning, add 1¼ quarts
Cooling system pressure, 15 pounds

★ **Battery** .... Test and fill
Riviera battery installed in reverse position
LeSabre with 300-cu. in. engine, right side

24 **Fuel Filter** .... Replace
More frequent replacement may be necessary if contaminated fuel is used
1964 300-cu. in. engine, left side front

★ **Power Steering Reservoir** .... PS
Fill to level mark, when oil is warm

Air Cleaner Element .... Service
12 Dry type .... Replace
12 Polyurethane .... Wash and oil MO

★ **Oil Fill Cap** .... Wash and oil MO
If cap is sealed type, wash and oil PCV system breather filter on valve cover. Also remove and clean hose

24 **Manual Steering Gear** (plug) .... 90 MP
1964, fill thru top cover cap screw marked "Check Lube"

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅛ inch below top of reservoir

★ **Electro-Cruise Power Unit Air Filter** .... Wash
Wash in solvent and dry

6 **Front Suspension** .... (8 fittings) CL

Steering Linkage CL
6 1964-65 (4 fittings)
C 1965, some 1964 (1 plug in idler arm)
C 1963 (**5 plugs**)
Plug-equipped points: If squeaks develop, remove plug, install fitting and lubricate with Buick Specification No. 742 or equivalent. Thereafter lubricate every 6,000 miles or 6 months

TRANSMISSION, Manual . MP, MO

90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, **3½ pints**, except with 300-cu. in. engine, **2 pints**; 4-speed, **2½ pints**
DRAIN and REFILL Not recommended

12 **Propeller Shaft Spline** .... LM
Rotate shaft until plug aligns with hole in frame
Remove plug. Use special adapter

★ **Constant Velocity Joints** .... LM
Not on 1963 Riviera; rear joint on 1964-65 Riviera only
To reach center joint, rotate shaft until depressed-type fitting aligns with hole in frame. Use special adapter

DIFFERENTIAL .... 90 MP*

80 grade when consistently below −10°
★ Maintain level to ¼ inch below fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723, or equivalent

GAS TANK .... Gallons

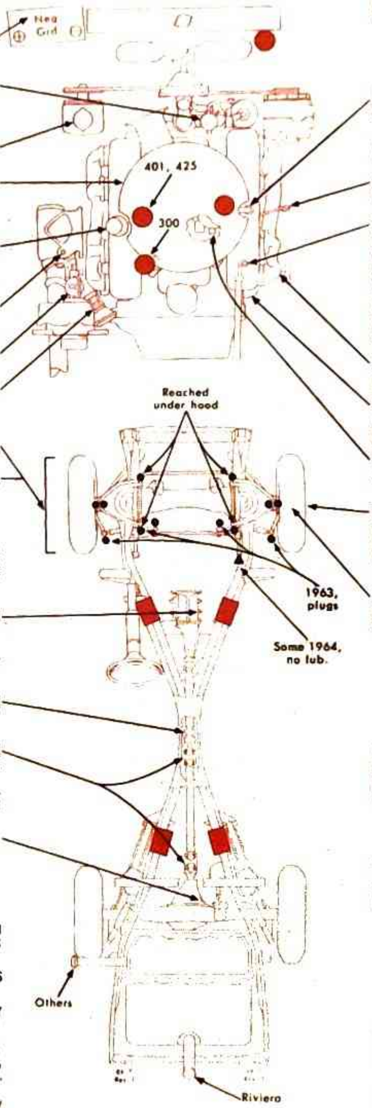
All models 20

TIRES

Pressure	Front	Rear
7.10-15	24▲†	24*†
7.60-15	24▲†	24*†
8.00-15	24†	24*†
8.45-15	24●	24‡●

▲ LeSabre coupes and sedans, **22**; with air conditioning, **24**
* Sedan or coupe for long distances with heavily loaded trunk, 200 pounds or more, **28-32**. Estate Wagon, **26**; with air conditioning, **28**
† For temperatures below +32°, increase pressure **2** pounds
● With air conditioning, add **2** pounds
‡ Full load (4 pass. plus 200 lb. trunk load), **28**

★ Rotate tires, Method A
12 Check wheel balance



🟥 Position for lift adapter
▲ Prepacked bearing
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

PCV System Valve .... Replace
Also remove and clean hose
1963-64 6 1965 12
When late type valve is installed on 1963-64 models, replace every 12,000 miles

Crankcase Dipstick .... Check level
1964 300-cu. in. engine, left side

TRANSMISSION, Automatic . . AF

Check level, engine idling, PARK position .... ★

CAPACITY, quarts	**Initial Refill**	**Total Refill**
All models	2	2½

DRAIN and REFILL 24
1963, disconnect fill pipe; do not drain converter
1964-65: Remove oil pan. Replace transmission filter. Under severe or heavy duty service, drain every 12,000 miles

Manifold Heat Control Valve Shaft .... MH ★
Not on 1964 300-cu. in. engine

Oil Filter (under car) .... Replace 6
Add extra quart oil. 1964 300-cu. in. engine, right side forward

Choke Housing Vent Filter .... Clean 12
On 1964 300-cu. in. engine

Front Wheel Bearings .... Repack WB C
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off 1/12 to 1/6 turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels) . BL 18
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 6,000 miles
6 Every 6,000 miles or 6 months
12 Every 12,000 miles
18 Every 18,000 miles
24 Every 24,000 miles
C Conditional service
Steering Linkage: Lubricate plug-equipped points only if squeaks develop
Repack front wheel bearings only when drums are removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Buick Specification No. 742 or equivalent. If conventional chassis lubricant is used, interval should not exceed 2,000 miles
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

BUICK V-8

1965 LeSabre, Wildcat, Electra

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
LeSabre 300 engine	24	61
401, 425 engines	27	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
Lowest reading cylinder must be more than 75% of the highest reading cylinder

SPARK PLUGS

AC 44S; for high-speed driving or hauling trailers, 42 Commercial
Gap: .035"
Torque: 30 ft. lb.

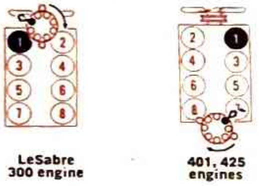
IGNITION POINTS

Delco Gap: .016"
Dwell angle: 29°-31° (30° preferred)

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence

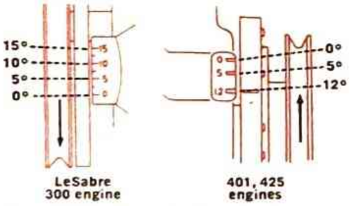


Firing Order:
LeSabre 300 engine **1, 8, 4, 3, 6, 5, 7, 2**
401, 425 engines **1, 2, 7, 8, 4, 5, 6, 3**

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug or distributor cap tower
5. Set engine to idle speed
6. Observe timing at crankshaft damper, turn distributor to obtain specified setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
300 eng. at 550 rpm, 2½°
401, 425 engs. at 500 rpm, 2½°
425 eng. with dual 4-bbl. and Auto. Trans. at 500 rpm, 12°

FUEL PUMP

AC model HE; except LeSabre 300 eng., model JU
Pressure: 4¾-6½ lb. at idle rpm; except LeSabre 300 eng., 4-5¼ lb. at idle rpm; at carburetor height
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
2 4-bbl. AFB	2	index	index
4-bbl. AFB	¾	index	index
ROCHESTER			
2-bbl. 2GC	1½	index	index
4-bbl. 4GC	1½	index	index

ENGINE IDLE SPEED

Manual Trans.: 300 eng. 550 rpm*
401, 425 engs. 500 rpm*
Auto. Trans.: 300 eng. 550 rpm* in DRIVE
401, 425 engs. 500 rpm* in DRIVE
Air Cond.: 300 eng. 600 rpm* in DRIVE, unit turned OFF
401, 425 engs. 550 rpm* in DRIVE, unit turned OFF
* Idle compensator valve closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

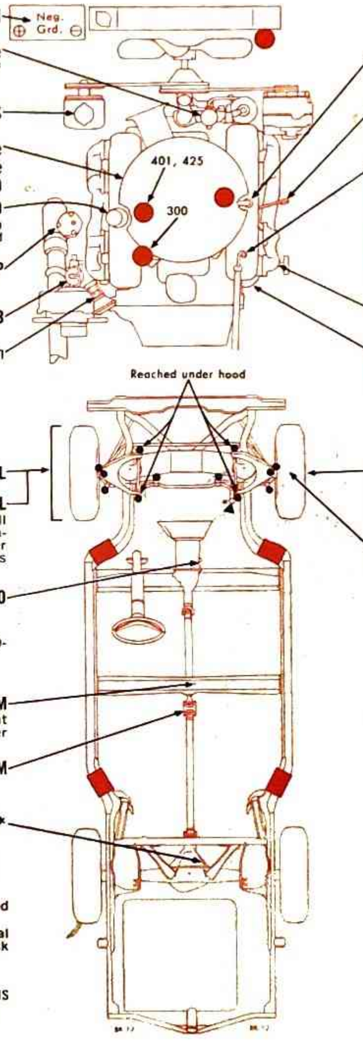
SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
LeSabre	12¼*	11½
Others with 401-cu. in. eng.	17½*	16¾
Others with 425-cu. in. eng.	18*	17¼

* With air conditioning: LeSabre, 14½; others, 18¼
Cooling system pressure, 15 pounds



★ **Battery** .... Test and fill
LeSabre with 300-cu. in. engine, right side

24 **Fuel Filter** .... Replace
More frequent replacement may be necessary if contaminated fuel is used
300-cu. in. engine, left side front

★ **Power Steering Reservoir** .... PS
Fill to level mark, when oil is warm

Air Cleaner Element .... Service
12 Dry type .... Replace
12 Polyurethane .... Wash and oil MO

★ **Oil Fill Cap** .... Wash and oil MO
If cap is sealed type, wash and oil PCV system breather filter on valve cover. Also remove and clean hose

24 **Manual Steering Gear** .... 90 MP
Fill thru top cover cap screw marked "Check Lube"

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅛ inch below top of reservoir

★ **Electro-Cruise Power Unit Air Filter** ...... Wash
Wash in solvent and dry

6 **Front Suspension and Steering Linkage** .... (12 fittings) CL

C **Idler Arm** .... (plug) CL
If squeaks develop, remove plug, install fitting and lubricate with Buick Specification No. 742 or equivalent. Thereafter lubricate every 6,000 miles or 6 months

TRANSMISSION, Manual . MP, MO

90MP, or 40 or 50MO
★ Maintain level to fill plug hole
CAPACITY 3-speed, **3½ pints**, except with 300-cu. in. engine, **2 pints**; 4-speed, **2½ pints**
DRAIN and REFILL Not recommended

12 **Propeller Shaft Spline** .... LM
Rotate shaft until plug aligns with hole in right side of frame. Remove plug. Use special adapter

★ **Constant Velocity Joints** .... LM
Depressed type fitting. Use special adapter

DIFFERENTIAL .... 90 MP*

80 grade when consistently below −10°
★ Maintain level to fill plug hole
CAPACITY LeSabre, **2½ pints**; others **4½ pints**
DRAIN and REFILL Not recommended
POSITIVE TRACTION IDENTIFICATION:
Metal tag under fill plug except LeSabre, attached to rear cover
* For Positive Traction differential, use special lubricant Part No. 531536, conforming to Buick Specification No. 723, or equivalent

GAS TANK .... Gallons

All models **25**

TIRES

Pressure	Front	Rear
8.15-15, 8.45-15, 8.75-15	24*	24†

* With air conditioning, **26**
† Full load, **28**

★ Rotate tires, Method A
12 Check wheel balance

- 🟥 Position for lift adapter
- ▲ Prepacked bearing
- ● Lubrication fitting
- 🔴 Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

PCV System Valve .... Replace **12**
Also remove and clean hose

Crankcase Dipstick .... Check level
300-cu. in. engine, left side

TRANSMISSION, Automatic . AF

Check level, engine idling, PARK position .... **★**

CAPACITY, quarts	Initial Refill	Total Refill
All models	2	2½

DRAIN and REFILL **24**
Remove oil pan. Replace transmission oil filter
Under severe or heavy-duty service, drain every 12,000 miles

Manifold Heat Control Valve Shaft .... MH **★**

Oil Filter (under car) .... Replace **6**
Add extra quart oil. 300-cu. in. engine, right side forward

Front Wheel Bearings .... Repack WB **C**
Initial torque, 19 ft. lb. while rotating wheel; back off until bearing is loose; second torque, 11 ft. lb.; back off 1/12 to 1/6 turn and insert cotter pin

Brake Self-adjusting Mechanism (all wheels) BL **18**
Coat lightly star wheel point of contact, threads of adjusting screw and 6 shoe rim rest surfaces

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Hold self-adjusting actuator off adjusting screw and turn adjusting screw until wheel can just be turned by hand. Drag should be equal at all wheels
2. Back off adjusting screw 30 notches (1 or 2 additional notches if drag persists)
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 6,000 miles
6 Every 6,000 miles or 6 months
12 Every 12,000 miles
18 Every 18,000 miles
24 Every 24,000 miles
C Conditional service
Lubricate plug-equipped idler arm only if squeaks develop
Repack front wheel bearings only when drums are removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Buick Specification No. 742 or equivalent. If conventional chassis lubricant is used, interval should not exceed 2,000 miles
BL	Self-adjusting Brake Lubricant Delco Moraine Specification MP6805 or equivalent
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 1
MH	Manifold Heat Control Valve Solvent Buick Part No. 980108
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Standard differential only: Specification MIL-L-2105B
PS	Power Steering Fluid Buick Part No. 1099021 or equivalent
WB	Wheel Bearing Grease

CADILLAC

1961-62 All Models

1961

1962

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	60	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 165-185

SPARK PLUGS

AC 44
Gap: .035"
Torque: 25 ft. lb.

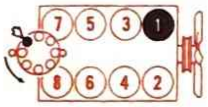
IGNITION POINTS

Delco
Gap: Proper gap will be obtained with dwell angle of 30°
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

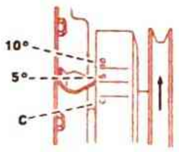


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 5°

FUEL PUMP

AC model 4622
Pressure: 5¼-6½ lb. at 480 rpm
Volume: 1 pint in 17 strokes at cranking speed

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
CARTER 4-bbl. AFB	2½	1 rich
ROCHESTER 4-bbl. 4GC	1½-2½	1 rich

ENGINE IDLE SPEED

480 rpm in DRIVE
Air Cond. 900 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . .Quarts

	With Heater	Without Heater
75 series	20¾	18½
All other models	19¼	18½

Cooling system pressure, 13½-16½ pounds

★ **Power Steering Reservoir**. . . . .**PS**
Fill to 1½ inches from top of reservoir

Crankcase Dipstick. . . . .**Check level**

Air Cleaner Element. . . . .**Service**
TY Polyurethane . . . . .Inspect
Inspect for dust leakage and proper seating. If damaged, replace
30 Polyurethane . . . . .Replace

★ **Brake Master Cylinder** (1 or 2 screw caps). .**HB**
Fill to ¾ inch from top of filler neck or to level mark

★ **Manifold Heat Control Valve Shaft**. . . . .**Service**
Keep valve shaft free

★ **Distributor Shaft** (oil cup) 1961. . . . . .**10W MO**

★ **Front Suspension** (4 plugs). . . . .**BJ**
Inspect seal, if damaged, replacement is necessary. Before installing new seal, flush joint with approx. 1 or 2 oz. of lubricant, wipe off surplus. Install new plug and seal

★ **Steering Linkage** (4 plugs). . . . .**LL**
Inspect seal, if damaged, replacement is necessary. After replacing seal, remove plug, use special gun or adapter. Install new plug

TY **Parking Brake Cable 1962**. . . . .**10W MO**
Sparingly at point where cable enters conduit

TY **Parking Brake Cables** . . . .**10W MO**
Sparingly at point where cable enters conduit

DIFFERENTIAL . . . . .90 MP*

TY Maintain level to within ½ inch of fill plug hole 1961, to level of fill plug hole
CAPACITY 5 pints
DRAIN and REFILL Not recommended
CONTROLLED DIFFERENTIAL IDENTIFICATION:
Code letter "G" following axle ratio identification on differential carrier

GAS TANK . . . . .Gallons

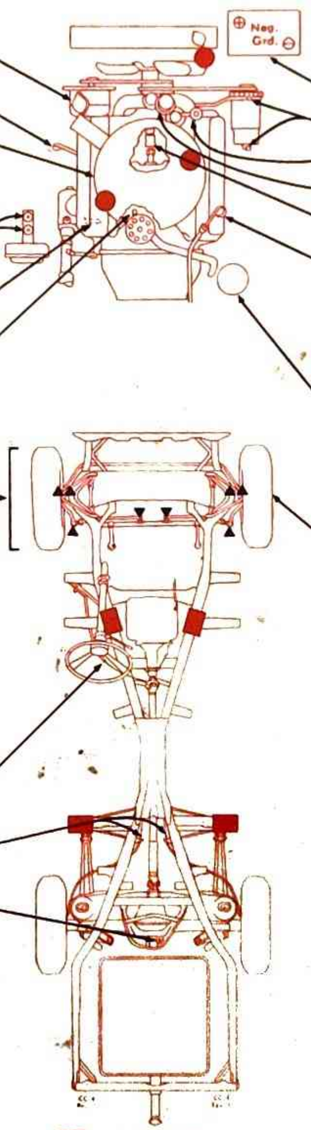
1961 Commercial	20
All other models	21
1962 Comm. and Models 6289, 6389	21
All other models	26

TIRES. . . . . .Pressure	Front	Rear
8.00-15, 8.20-15	24*	24*
8.20-15, 6 ply	28*	28*
8.90-15, 8 ply	24*	32*

* Sustained speeds above 75 mph, add 4 pounds

★ Rotate tires, Method A, then balance wheels

Chek Chart



■ **Position for lift adapter**
Do not use frame contact hoist or bumper jack on 75 series and Commercial vehicles

▲ **Prepacked bearing**

● **Cooling system drain**

CRANKCASE

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery. . . . .**Test and fill** ★

Generator (2 oil cups). . . . .**MO** ★

Fuel Filter Element. . . . .**Replace** TY

Oil Fill Cap. . . . .**Wash and oil MO** ★

PCV System Valve. . . . .**CC** ★
Remove and clean valve and hose

TRANSMISSION. Automatic . . AF

Check level, engine idling, PARK position ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	7	9

DRAIN and REFILL. 16
Severe service drain every 9,000 miles
Initial drain 30,000 miles, except severe service, 16,000 miles
Remove 1 coupling plug and transmission plug

Oil Filter (under car). . . . .**Replace** ★
Add extra quart oil

Front Wheel Bearings. . . . .**Repack WB** 30
Initial torque, 30 ft. lb.; final adjustment, back off nut ¼ turn then loosen just enough to insert cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required. If the brakes have been relined, or the adjustment disturbed, make initial adjustment as follows:

1. Remove wheel, check front wheel bearings for proper adjustment, and that all points of the parking brake system are free
2. Tighten star wheel until drum can just be rotated with two-foot bar placed between the studs
3. Disengage adjuster pawl from star wheel with a hooked tool and back off star wheel 40 notches with screwdriver or brake adjuster tool
4. Install wheel, drive car alternately backward and forward, applying the brakes moderately in each direction until pedal travel does not exceed 1⅞" on moderate, approximately 30-pound, pedal application
5. Repeat procedure at each wheel, except for making bearing adjustment at rear wheels

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 4,000 miles
16 Every 16,000 miles
30 Every 30,000 miles
TY Twice yearly

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Cadillac Part No. 1474829
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty
LL	Steering Linkage Lubricant Cadillac Part No. 1474830
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid Cadillac Part No. 1099021
WB	Wheel Bearing Grease

* Controlled Differential, use Cadillac Part No. 1098970; may also be used in standard differential

1963

1964

1965

HOOD RELEASE: Front

CADILLAC
1963-64 All Models
1965 75 Series

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
1963	60	70
1964	60	73
1965	60	73

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 165-185

SPARK PLUGS

AC 44
Gap: .035"
Torque: 25 ft. lb.

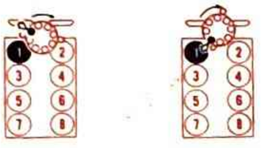
IGNITION POINTS

Delco
Gap: Proper gap will be obtained with dwell angle of 30°
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



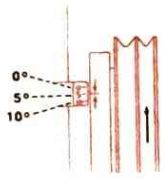
1963 1964-65

Firing Order: 1, 8, 7, 2, 6, 5, 4, 3

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 5°

FUEL PUMP

AC model 6744
Pressure: 1963, 5¼-6¼ lb.; 1964-65, 5¼-6½ lb.; at idle rpm
Volume: 1 pint in 17 strokes at cranking speed

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
CARTER 4-bbl. AFB	2½	index*
ROCHESTER 4-bbl. 4GC	1½-2½	index*

* 1963, 1 rich

ENGINE IDLE SPEED

1963-64, 480-500 rpm; 1965, 480 rpm; in DRIVE
Air Cond. 900 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
1963-64 75 series...	19¾	16¼
1965 75 series......	19¾	18½
All other models....	17¼	16¼

With air conditioning, add 1 quart
1965 models, do not add coolant until level is 1 inch below FILL COLD mark on right radiator tank
Cooling system pressure, 13½-16½ pounds

TY **Power Steering Reservoir................PS**
Fill to FULL mark on dipstick, fluid warm

Air Cleaner Element................Service
TY Dry type or Polyurethane.........Inspect
Inspect for dust leakage and proper seating. If damaged, replace
30 Dry type or Polyurethane.........Replace
★ With closed PCV system, wash and oil wire gauze filter located inside air cleaner housing

Crankcase Dipstick..............Check level

★ **Brake Master Cylinder..................HB**
(1963, 2 screw caps; 1964-65, cover)
1963, fill to ¾ inch below top of fill cap boss; 1964-65, within ¼ inch to ½ inch of top of reservoir

Manifold Heat Control Valve Shaft.....Service
Keep valve shaft free
★ 1963-64 **TY** 1965

★ **Front Suspension...............(4 plugs) BJ**
Inspect seal; if damaged, replacement is necessary. Before installing new seal, flush joint with approx. 1 or 2 oz. of lubricant, wipe off surplus. Install new plug and seal

★ **Steering Linkage..........(4 sealed bearings)**
Inspect seal; if damaged, or if there is evidence of looseness, replace entire pivot assembly

TY **Parking Brake Cables..............10W MO**
Check adjustment. Lubricate cables and linkage only if adjustment is made. Lubricate cables sparingly at point where cable enters conduit

DIFFERENTIAL ....90 MP*

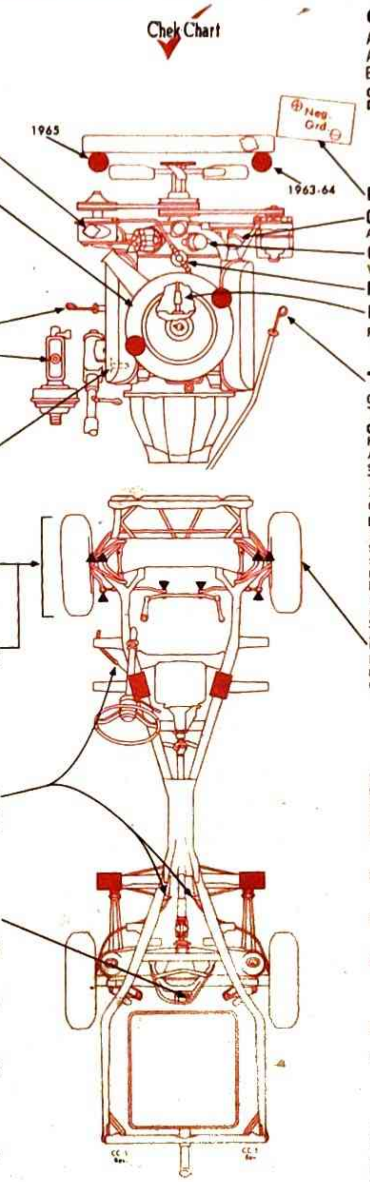
★ Inspect; check level only if leakage is evident. Maintain level to within ½ inch of fill plug hole
CAPACITY 5 pints
DRAIN and REFILL Not recommended
CONTROLLED DIFFERENTIAL IDENTIFICATION: Code letter "G" preceding axle ratio identification on differential carrier

GAS TANK	Gallons
Commercial and 1963 Model 6389	21
All other models	26

TIRES ....Pressure	Front	Rear
8.00-15	26*	26*
8.20-15	24*	24*
8.20-15, 6 ply	28*	28*
8.90-15, 6 or 8	24*†	32*†

* Sustained speeds above 75-80 mph, add 4 pounds, except 8.00-15, 2 pounds
† With heavy-duty suspension components, front 26, rear 40

6 Rotate tires, Method A, then balance wheels; on mileage basis only



🟥 Position for lift adapter
Do not use frame contact hoist or bumper jack on 75 series and Commercial vehicles

▲ Prepacked bearing

● Cooling system drain

CRANKCASE		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery...........................Test and fill ★

Oil Filter ....Replace **6**
Add extra quart oil

Oil Fill Cap.............. Wash and oil MO ★
With closed PCV system, sealed cap, no service

Fuel Filter Element..................Replace **TY**

PCV System Valve.........................CC
Remove and clean valve and hose
1963-64 ★ 1965 **12**

TRANSMISSION, Automatic AF

Check level, engine idling, PARK position....... ★
Turbo Hydra-Matic, twist-lock dipstick on fill tube

CAPACITY, quarts	Initial Refill	Total Refill
Hydra-Matic All 1963; 1964 62 series except convertibles, 75 series, 68 commercial chassis	7	9
Turbo Hydra-Matic 1964 60 and 63 series, convertibles; 1965 all models	2	2¼

DRAIN and REFILL............................ **24**
1963-64, initial drain 30,000 miles, except severe service, 16,000 miles. Remove pan and install new strainer at first 30,000 miles only. 1965, install new strainer at first 24,000 miles only
Hydra-Matic, remove 1 coupling plug and transmission plug. Turbo Hydra-Matic: 1964, disconnect fill tube; 1965, remove oil pan
Severe service drain every 12,000 miles

Front Wheel Bearings.............Repack WB
Initial torque, 30 ft. lb.; final adjustment, back off nut ¼ turn then loosen just enough to insert cotter pin
1963-64 **30** 1965 **C**

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required. If the brakes have been relined, or the adjustment disturbed, make initial adjustment as follows:

1. Remove wheel, check front wheel bearings for proper adjustment, and that all points of the parking brake system are free
2. Tighten star wheel until drum can just be rotated with two-foot bar placed between the studs
3. Disengage adjuster pawl from star wheel with a hooked tool and back off star wheel 40 notches with screwdriver or brake adjuster tool
4. Install wheel, drive car alternately backward and forward, applying the brakes moderately in each direction until pedal travel does not exceed 1⅞" on moderate, approximately 30-pound, pedal application
5. Repeat procedure at each wheel, except for making bearing adjustment at rear wheels

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 60 days or 6,000 miles
6 Every 6 months or 6,000 miles
12 Every 12,000 miles or yearly
24 Every 24,000 miles
30 Every 30,000 miles
TY Twice yearly
C Conditional service
1965, repack front wheel bearings at time of brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Cadillac Part No. 1474829
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid GM Part No. 1050017
WB	Wheel Bearing Grease

* Controlled differential, use GM Part No. 1050189; may also be used in standard differential

CADILLAC

1965 All Models Except 75 Series

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	27	73

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	165-185

SPARK PLUGS

AC 44
Gap: .035"
Torque: 25 ft. lb.

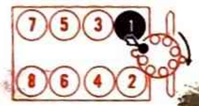
IGNITION POINTS

Delco
Gap: Proper gap will be obtained with dwell angle of 30°
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

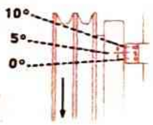


Firing Order: 1, 8, 7, 2, 6, 5, 4, 3

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 5°

FUEL PUMP

AC model 6744
Pressure: 5¼-6½ lb. at idle rpm
Volume: 1 pint in 17 strokes at cranking speed

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
CARTER		
4-bbl. AFB	2½	index
ROCHESTER		
4-bbl. 4GC	1½-2½	index

ENGINE IDLE SPEED

480 rpm in DRIVE
Air Cond. 900 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM........Quarts

	With Heater	Without Heater
All models	19	17½

Do not add coolant until level is 1 inch below FILL COLD mark on right radiator tank
Cooling system pressure, 13½-16½ pounds

TY **Power Steering Reservoir**................PS
Fill to FULL mark on dipstick, fluid warm

Air Cleaner Element................Service
TY Dry type......................Inspect
Inspect for dust leakage and proper seating. If damaged, replace
30 Dry type......................Replace
★ With closed PCV system, wash and oil wire gauze filter located inside air cleaner housing

Crankcase Dipstick.............Check level

★ **Brake Master Cylinder**.................HB
Fill to within ¼ inch to ½ inch of top of reservoir

TY **Manifold Heat Control Valve Shaft**.....Service
Keep valve shaft free

★ **Front Suspension**..............(4 plugs) BJ
Inspect seal; if damaged, replacement is necessary. Before installing new seal, flush joint with approx. 1 or 2 oz. of lubricant, wipe off surplus. Install new plug and seal

★ **Steering Linkage**..........(4 sealed bearings)
Inspect seal; if damaged, or if there is evidence of looseness, replace entire pivot assembly

TY **Parking Brake Cables**..............10W MO
Check adjustment. Lubricate cables and linkage only if adjustment is made. Lubricate cables sparingly at point where cable enters conduit

DIFFERENTIAL...........90 MP*

★ Inspect, check level only if leakage is evident. Maintain level to within ½ inch of fill plug hole
CAPACITY 5 pints
DRAIN and REFILL Not recommended
CONTROLLED DIFFERENTIAL IDENTIFICATION: Code letter "G" preceding axle ratio identification on differential carrier

GAS TANK...........Gallons

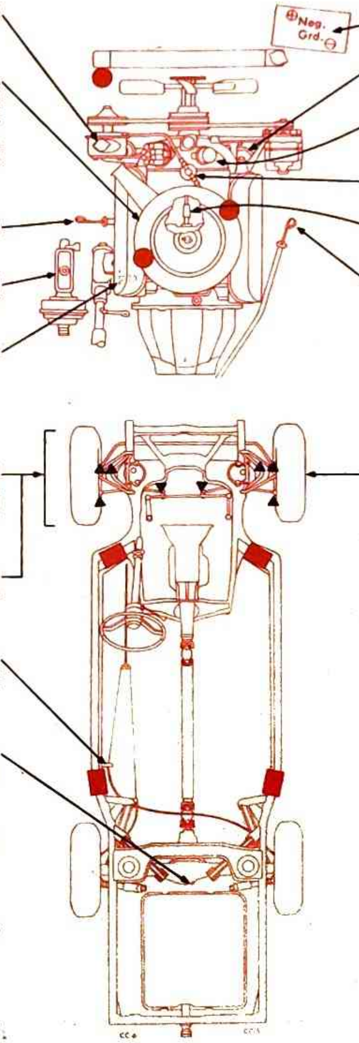
	Gallons
Commercial	20
All other models	26

TIRES

Pressure	Front	Rear
8.00-15	26*	26*
9.00-15	24*	24*
8.90-15, 8 ply	24*†	32*†

* Sustained speeds above 80 mph or heavy loads, add 4 pounds
† With heavy-duty suspension components, front 26, rear 40

6 Rotate tires, Method A, then balance wheels; on mileage basis only



🟥 Position for lift adapter
Do not use frame contact hoist or bumper jack on Commercial

▲ Prepacked bearing

● Cooling system drain

CRANKCASE..........."MS" MO

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery......................Test and fill **★**

Oil Filter.........................Replace **6**
Add extra quart oil

Oil Fill Cap..............Wash and oil MO **★**
With closed PCV system, sealed cap, no service

Fuel Filter Element................Replace **TY**

PCV System Valve.......................CC **12**
Remove and clean valve and hose

TRANSMISSION, Automatic..AF

Check level, engine idling, PARK position....... **★**
Twist-lock dipstick on fill tube

CAPACITY, quarts	Initial Refill	Total Refill
All models	2	2¼

DRAIN and REFILL........................ **24**
Remove oil pan
Install new strainer at first 24,000 miles only
Severe service, drain every 12,000 miles

Front Wheel Bearings...........Repack WB **C**
Initial torque, 30 ft. lb.; final adjustment, back off nut ¼ turn then loosen just enough to insert cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required. If the brakes have been relined, or the adjustment disturbed, make initial adjustment as follows:

1. Remove wheel, check front wheel bearings for proper adjustment, and that all points of the parking brake system are free
2. Tighten star wheel until drum can just be rotated with two-foot bar placed between the studs
3. Disengage adjuster pawl from star wheel with a hooked tool and back off star wheel 40 notches with screwdriver or brake adjuster tool
4. Install wheel, drive car alternately backward and forward, applying the brakes moderately in each direction until pedal travel does not exceed 1⅞" on moderate, approximately 30-pound, pedal application
5. Repeat procedure at each wheel, except for making bearing adjustment at rear wheels

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 60 days or 6,000 miles
6 Every 6 months or 6,000 miles
12 Every 12,000 miles or yearly
24 Every 24,000 miles
30 Every 30,000 miles
TY Twice yearly
C Conditional service
Repack front wheel bearings at time of brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Cadillac Part No. 1474829
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid GM Part No. 1050017
WB	Wheel Bearing Grease

* Controlled differential, use GM Part No. 1050189; may also be used in standard differential

1958
1959
1960
1961
1962

CHEVROLET 6

1958-62 All Models
Except Corvair, Chevy II

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24 24T	53, 61 70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	130

Maximum variation between cylinders, less than 20 psi

SPARK PLUGS

AC: 1958-60, 44; 1961, 45; 1962, 46
Gap: .035"
Torque: 25 ft. lb.

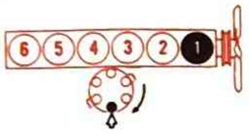
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 28°-35°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

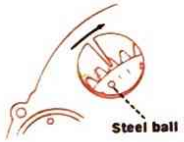


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROGEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set octane selector to 0° on the scale
5. Set idle speed with transmission in NEUTRAL
6. Observe timing mark through opening in flywheel housing and turn distributor to obtain alignment of specified mark with pointer
7. Reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1958, 0° (Steel ball aligned with pointer)
1959-62, 5° (First short radial mark clockwise from steel ball or stamped O aligned with pointer)

FUEL PUMP

AC model: 1958, 4433, 4666, 4434*; 1959-62, 4434
Pressure: 3½-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 45 seconds at 1000 rpm
* Optional for electric wipers

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BC	2½	1 lean	index*

* 1962, 2 rich

ENGINE IDLE SPEED

Manual Trans.: 1958-61, 475 rpm; 1962, 500 rpm
Auto. Trans. 475 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1958	17½	16½
1959-62	18	17

Cooling system pressure, 13 pounds

★ **Steering Gear** (plug) .... SG
Maintain level to ¼ inch below top of fill hole

★ **Power Steering Reservoir** .... AF
At rear of generator on 1958-59
Fill to FULL mark on gage

★ **Generator** (2 oil cups) .... MO
Do not overfill front cup

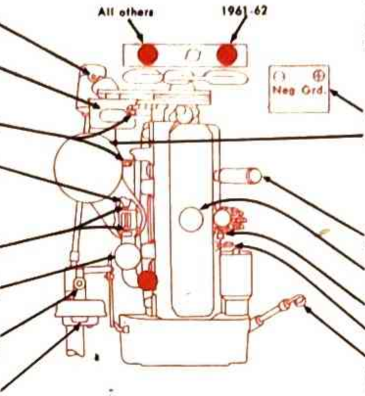
Fuel Filter Element .... Replace
Located in carburetor fuel inlet
15 1960-61 models
C 1962 models

C **Manifold Heat Control Valve** .... MH

4 **Oil Filter** .... Replace
Add extra quart oil

★ **Brake Master Cylinder** (plug) .... HB
Fill to: 1958-59, ½-1 inch; 1960-61, ½ inch; 1962, ¼ inch below top of fill hole

TY **Power Brake Air Cleaner Element** .... Wash
1958-61 only



CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

*30 may be used for sustained high speed above +90°

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Air Cleaner Element .... Service
Oil bath .... Wash and fill MO 5
Summer, 50; winter, 20
Wire gauze .... Wash and oil MO 2
Polyurethane .... Wash and oil 10W MO 4

PCV System Valve .... CC 10
Remove and clean valve and hose

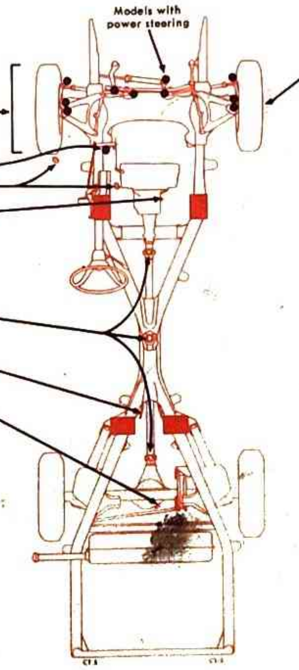
Oil Fill Cap .... Wash and oil MO 4
1958, located forward

Distributor Shaft (grease cup) .... CL ★

Crankcase Dipstick .... Check level

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 4½ quarts
DRAIN and REFILL 12
Remove transmission drain plug
More often for heavy-duty operation



★ **Front Suspension and Steering Linkage** ......(9 or 10 fittings) CL

★ **Clutch Cross Shaft 1959-62** CL

★ **Parking Brake Cables and Pulleys** .... Coat WG

TRANSMISSION, Manual .. 90 MP

★ Maintain level to fill plug hole
CAPACITY 2 pints; with overdrive, 3 pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

25 **Universal Joints** .... Repack WB
More often under adverse conditions

★ **Parking Brake Cable Guides** .... Coat WG

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
Y 1958-61
1962 Not recommended

POSITRACTION IDENTIFICATION:
1959-62, late 1958, circular metal tag under fill plug. 1958 without metal tag, prefix letters AK, AL, AM, to serial number on front right side of carrier housing

GAS TANK

	Gallons
Sedan delivery, sedan pick-up	17
1958-60 station wagon	17
1959-60 9-passenger station wagon	18
1961-62 station wagon	19
All other models	20

TIRES

Pressure	Front	Rear
7.50-14, 8.00-14	24	24
Station wagons	24	28

5 Rotate tires, Method B, then balance wheels

🟥	Position for lift adapter
•	Lubrication fitting
●	Cooling system drain

Front Wheel Bearings .... Repack WB 10
1958-60, initial torque, 28 ft. lb., while rotating wheel; final adjustment, 12 ft. lb.
1961-62, initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Loosen parking brake cable adjustment nuts
2. Using suitable tool, turn star wheel adjuster to expand shoes until a light, uniform drag is felt when turning drum
3. Back off adjuster 12 notches (1958, 7 notches)
4. Repeat operation at each wheel
5. Readjust parking brake cable

Bleeding sequence: LR, RR, RF, LF

Power brake (engine stopped) power brake slave cylinder, power brake valve LR, RR, RF, LF

KEY TO INTERVALS

★ Every 1,000 miles
2 Every 2,000 miles
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
5 Every 5,000 miles
10 Every 10,000 miles
12 Every 12,000 miles
15 Every 15,000 miles
25 Every 25,000 miles
TY Twice yearly
Y Yearly or every 10,000 miles
C Conditional service
1962, replace fuel filter element only if carburetor flooding occurs
Lubricate manifold heat control valve if shaft is not free

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET 6
1963-64 Impala, Bel Air, Biscayne

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44
Air Conditioning	24	53
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	130

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; for continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

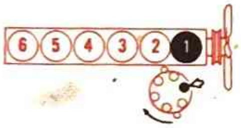
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

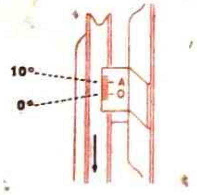


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4° (Range, 4°-8°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 3½-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BV	1½	*	*

* One rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans. 1963 475-525 rpm
1964 450-500 rpm
Auto. Trans. 1963 475-525 rpm in DRIVE
1964 450-500 rpm in DRIVE

Set idle speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

1964 Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	12*	11½*

* With air conditioning, add 2 quarts

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

Steering Gear .... **SG**
★ 1963
36 1964
1963 and some early 1964, plug; maintain level to fill plug hole. Other 1964, remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Power Steering Reservoir** .... **AF**
With fluid at operating temperature and wheels in straight ahead position, fill to FULL mark on gage

Air Cleaner Element .... Service
6 Oil bath .... Wash and fill **MO**
Summer, 50; winter, 20
12 Polyurethane .... Wash and oil **MO**
More often with prolonged dusty driving

C **Manifold Heat Control Valve** .... **MH**

C **Fuel Filter Element** .... Replace
Located in carburetor fuel inlet

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** ...... (8 or 10 fittings) **CL**

Clutch Cross Shaft .... **CL**
★ 1963 (fitting)
36 1964 (plug)
Install fitting to lubricate

★ **Parking Brake Cables and Pulleys** ..... Coat **CL**

★ **Powerglide Control Shaft Linkage** ..... Coat **CL**

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints; with overdrive, 3 pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

30 **Universal Joints** 1963 .... Repack **WB**
More often under adverse conditions
1964, no service required

★ **Parking Brake Cable Guides** .... Coat **CL**

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK .... Gallons

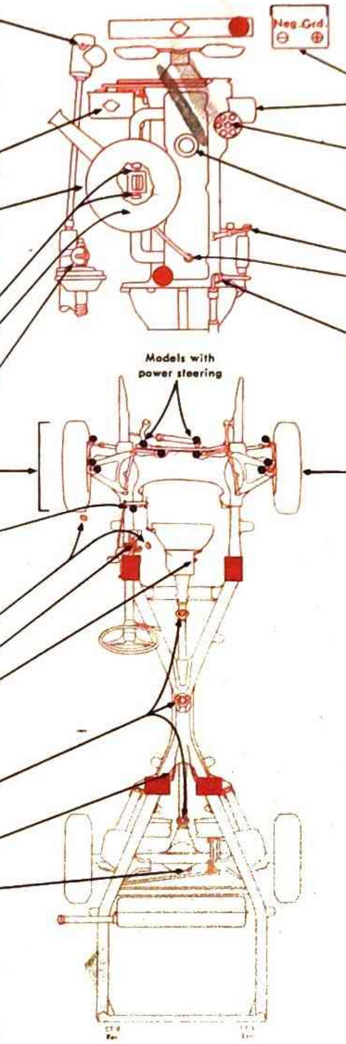
	Gallons
Station wagon	19
All other models	20

TIRES

Pressure	Front	Rear
7.00-14, 7.50-14, 8.00-14	24	24
Station wagons	24*	28*

* With heavy loads, front 22, rear 30

6 Rotate tires, Method B



CRANKCASE .... "MS" MO

Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter .... Replace ★
Add extra quart oil
More often with prolonged dusty driving

Distributor Cam Lubricator
Rotate 180° 12
Replace 24

Oil Fill Cap .... Wash and oil **MO** OC
With closed PCV system, sealed cap, no service

Crankcase Dipstick .... Check level

PCV System .... Test OC
As required, replace valve and clean hose

TRANSMISSION, Automatic .. AF

Check level, fluid warm, eng. idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
1963, remove pan; 1964, remove plug or pan
More often for heavy-duty operation

Front Wheel Bearings .... Repack **WB**
1963 30
1964 36
Initial torque, 12 ft. lb. while rotating wheel; final adjustment, back off 1 full flat, ¼ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: LR, RR, RF, LF

Power brake (engine stopped), power brake slave cylinder, power brake valve LR, RR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

★	Every 6,000 miles or 6 months
6	Every 6,000 miles
12	Every 12,000 miles
24	Every 24,000 miles
30	Every 30,000 miles
36	Every 36,000 miles
OC	Every crankcase oil change
C	Conditional service

Lubricate manifold heat control valve if shaft is not free

Replace fuel filter element if carburetor flooding occurs

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET 6

1965 Impala, Bel Air, Biscayne

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	22F	44
Air conditioning	24	53
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 130
Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; for continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

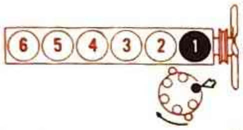
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

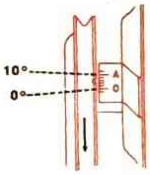


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4° (Range, 4°-8°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 3¼-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (Initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BV	1½	*	*

* One rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 450-500 rpm in DRIVE*
* Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts	With Heater
All models	12
With air conditioning	14

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature, fill to FULL mark on gage

C **Fuel Filter Element** .... Replace
Located in carburetor fuel inlet

C **Manifold Heat Control Valve** .... MH

Air Cleaner Element .... Service
12 Polyurethane .... Wash and oil MO
More often with prolonged dusty driving
With closed PCV system, also clean flame arrester inside air cleaner housing

36 **Manual Steering Gear** CL
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

36 **Clutch Cross Shaft** (plug) CL
Install fitting to lubricate

★ **Powerglide Control Shaft Linkage** ..... Coat CL

★ **Parking Brake Cable** .... Coat CL

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints; with overdrive, 3 pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

★ **Parking Brake Cable Guides** .... Coat CL

DIFFERENTIAL .... 80 MP*

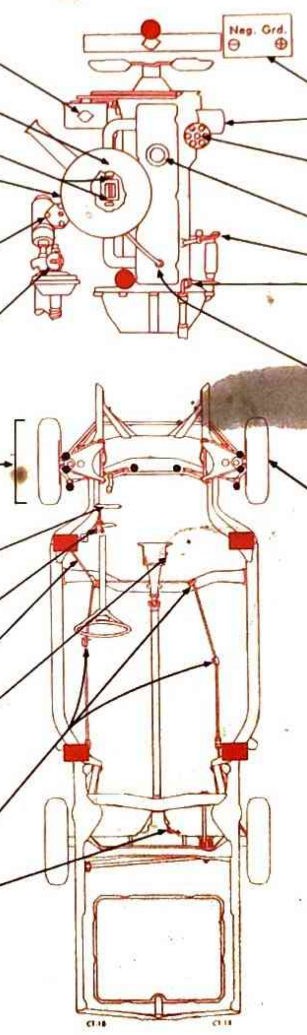
Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3½ pints except station wagon, 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK	Gallons
Station wagon	23½
All other models	20

TIRES .... Pressure	Front	Rear
7.35-14, 7.75-14, 8.25-14	24	24*
Station wagon	24	28*

* With heavy load, 30; 8-ply rating tires, 40

6 Rotate tires, Method B



🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter .... Replace ★
Add extra quart oil
More often with prolonged dusty driving

Distributor Cam Lubricator
Rotate 180° 12
Replace 24

Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service

Crankcase Dipstick .... Check level

TRANSMISSION, Automatic AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
Remove drain plug
More often for heavy-duty operation

PCV System .... Check OC
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF
Power brake (engine stopped), power brake slave cylinder, power brake valve LR, RR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter element if carburetor flooding occurs
Lubricate manifold heat control valve if shaft is not free
Repack front wheel bearings whenever wheels are removed for brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CL Chassis Lubricant Water Resistant EP Type
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH Graphite mixed with alcohol
MO Motor Oil
MP* Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET V-8
1958-62 All Models Except Corvette

1958
1959
1960
1961
1962

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	53, 61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
283, 348, 409 engines	150
283 engine with 2 bbl. carb.	140
327 engine	160

Maximum variation between cylinders, less than 20 psi

SPARK PLUGS

AC: All 1958 engs., and 1959-60 283 eng., 44; 1959-61 348 eng., 44N [illegible], 1960-61 348 eng. with spec. cam, 43N; [illegible] eng., 45; 1962 283 eng., 46; 1962 327 en[illegible] 1962 409 eng., 43N
Gap: .035"
Torque: 25 ft. lb.

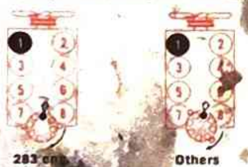
IGNITION POINTS

Delco
Gap: .016", used, .019", new; dual points, .014", used, .018", new
Dwell angle: Single points, 28°-32°; dual points each set, 29°, total dwell, 33°-34°

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence

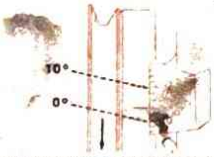


Firing Order: 1, [illegible] 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1958-59 348 eng., 4°; 1958-62 283 eng., 4°*; 1960-61 348 eng., 8°; 1962 327 eng., 4°**; 1962 409 eng., 12°
(Each line equals 2°)
* With special cam, 12° ** Hi-perform. eng. 8°

FUEL PUMP

AC mechanical
Pressure: 5¼-6½* lb. at idle to 1000 rpm
Volume: 1 pint in 45 seconds at idle rpm
* 1960-61, 348 eng. with spec. cam, 409 eng. 9¾-10¾ lb.

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. WCFB	1	index	index
4-bbl. AFB	1	index	—
ROCHESTER			
2-bbl. 2GC	1½	index*	index
4-bbl. 4GC	1-1½	—**	1 lean▲

* 1962, 1 lean ** 1962, index ▲327, 348 engs. index

ENGINE IDLE SPEED

Manual Trans. 500 rpm; 283 eng. with fuel injection, 500 rpm; except 409 eng. and others with special cam or fuel injection, 650 rpm
Auto Trans. 475 rpm in DRIVE, except 283 eng. with fuel injection or special cam, 600 rpm. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

(engine hot and running)
With special cam and 409 eng.: intake .008", exhaust .018"
Others, Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
348-cu. in. engine		
1958	23	22
1959-61	22	21
1962, 409-cu. in. eng.	22	21
All other models		
1958	17	16
1959-62	18	17

Cooling system pressure, 13 pounds

★ **Air Suspension Accumulator Tank** .... Drain
Open petcock to drain accumulated water and oil

★ **Air Suspension Vaporizer Jar** .... DA
Keep jar ½ full in freezing weather

★ **Air Suspension System Air Cleaner** ...... Wash

★ **Steering Gear** (plug) .... SG
Maintain level to ¾ inch below top of fill hole

★ **Power Steering Reservoir** .... AF
1958-59, at rear of generator
Fill to FULL mark on gage

★ **Generator** (2 oil cups) .... MO
Do not overfill front reservoir

Crankcase Dipstick .... Check level

★ **Brake Master Cylinder** (plug) .... HB
Fill to: 1958-59, ½-1 inch; 1960-61, ½ inch; 1962, ¼ inch below top of fill hole

TY **Power Brake Air Cleaner Element** ...... Wash
1958-61 only

4 **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Distributor Shaft** (oil cup) .... 10W MO
25 Cam lubricator .... Replace

10 **PCV System Valve** CC
Remove and clean valve and hose

★ **Front Suspension and Steering Linkage** ...... (9 or 10 fittings) CL

★ **Clutch Cross Shaft** CL

★ **Parking Brake Cables and Pulleys** .... Coat WG

★ **Turboglide Control Shaft Linkage** ..... Coat WG

TRANSMISSION, Manual . 90 MP

★ Maintain level to fill plug hole. 1958-60 4-speed, ½ inch below

CAPACITY 3-speed, **2 pints**; with overdrive, **3 pints**; 4-speed, **1½ pints, except 1961-62, 2½ pints**

DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

25 **Universal Joints** .... Repack WB
More often under adverse conditions

★ **Parking Brake Cable Guides** .... Coat WG

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole

CAPACITY 4 pints

DRAIN and REFILL
Y 1958-61
1962 Not recommended

POSITRACTION IDENTIFICATION:
1959-62, late 1958, circular metal tag under fill plug. 1958 without metal tag, prefix letters AK, AL, AM to serial number on front side of carrier housing

GAS TANK .... Gallons

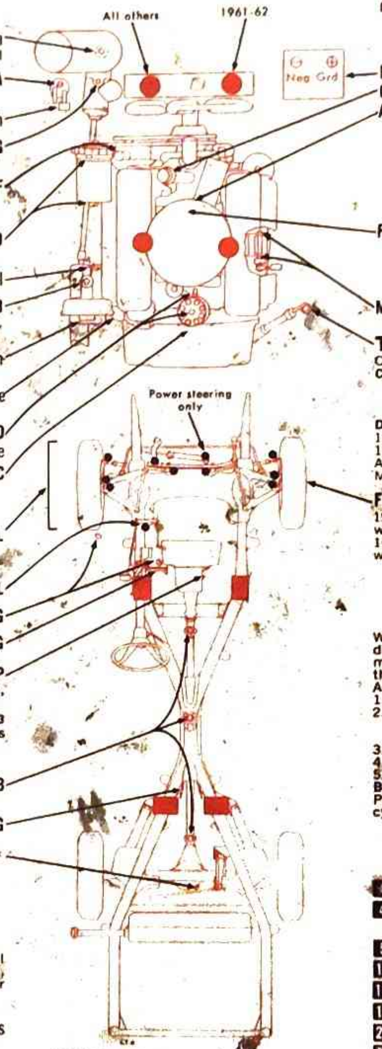
	Gallons
Sedan delivery, sedan pick-up	17
1958-60 station wagon	17
1959-60 9-passenger station wagon	18
1961-62 station wagon	19
All other models	20

TIRES

Pressure	Front	Rear
7.50-14, 8.00-14	24	24
Station wagons	24	28

5 Rotate tires, Method B, then balance wheels

Chek Chart



LIFTING CAUTION—AIR SUSPENSION
Close shut-off valve located on frame to left of steering gear, before jacking or raising car with any free wheel type lift

🟥	Position for lift adapter
●	Lubrication fitting
🔴	Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20, 20W*	10W-30
Above 0°	10W	10W-30, 5W-30
Below 0°	5W	5W-20, 5W-30

*30 may be used for sustained high speed above +90°

CAPACITY 4 quarts, except 409-cu. in. engine, **5 quarts**

DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Oil Fill Cap .... Wash and oil MO 4
Air Cleaner Element .... Service
Dry type .... Replace if necessary 15
If not replaced, test every 5,000 miles thereafter
Polyurethane ...... Wash and oil 10W MO 4
Oil bath .... Wash and fill MO 5
Summer, 50; winter, 20
Fuel Filter Element .... Replace
In bowl-type fuel filter 5
In carburetor fuel inlet, 1960-61 15
1962, only if flooding occurs C
Manifold Heat Control Valve .... MH C

TRANSMISSION, Automatic . . AF

Check level, fluid warm, engine idling, in NEUTRAL ★

CAPACITY, quarts	Refill
Powerglide ex. aluminum housing	4½
Powerglide with aluminum housing	2
Turboglide	2

DRAIN and REFILL 12
1961 Turboglide, disconnect fill tube
1962 with aluminum housing, remove oil pan
All others, remove drain plug
More often for heavy-duty operation

Front Wheel Bearings .... Repack WB 10
1958-60, initial torque, 28 ft. lb., while rotating wheel; final adjustment, 12 ft. lb.
1961-62, initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ¼ turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1. Loosen parking brake cable adjustment nuts
2. Using suitable tool, turn star wheel adjuster to expand shoes until a light, uniform drag is felt when turning drum
3. Back off adjuster 12 notches (1958, 7 notches)
4. Repeat operation at each wheel
5. Readjust parking brake cable

Bleeding sequence: LR, RR, RF, LF
Power brake (engine stopped), power brake slave cylinder, power brake valve **LR, RR, RF, LF**

KEY TO INTERVALS

★	Every 1,000 miles
4	Every 4,000 miles Oil Filter: Every 4,000 miles or 6 months
5	Every 5,000 miles
10	Every 10,000 miles
12	Every 12,000 miles
15	Every 15,000 miles
25	Every 25,000 miles
TY	Twice yearly
Y	Yearly or every 10,000 miles
C	Conditional service

▶ 1962, ex. bowl-type, replace fuel filter element only if flooding occurs
▶ Lubricate manifold heat control valve if shaft is not free

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
DA	Denatured or Wood Alcohol
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease
WG	White Waterproof Grease

*For Positraction differential, use Special Positraction Lubricant

CHEVROLET V-8

1963-64 Impala, Bel Air, Biscayne

1963 1964

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
283 engine	22F	44
With air conditioning	24	53
327, 409 engines	24	61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
283 engine: 1963	140
1964	150
327 engine	160
409 engine	150

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC: 283 eng. 45; 327 eng. 44; 409 eng. 43N. For city type operation: 283 eng. 46; 327 eng. 45 or 46; 409 eng. 44N. For continuous heavy-duty operation: 283 eng. 44; 327 eng. 43; 409 eng. C42N
Gap: .035" Torque: 25 ft. lb.

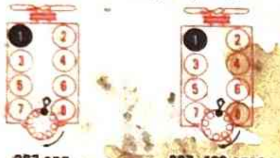
IGNITION POINTS

Delco
Gap: .016" used; .019" new Dwell angle: 28°-32°

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence



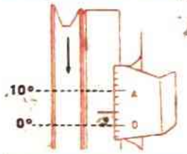
283 eng. 327, 409 engs.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1963: 283 eng. 4°; 327 eng. 4°*; 409 eng. 8°**
1964: 283; 327 engs. with WCFB or 4GC carb. 4° (Range, 4°-8°); 327 eng. with AFB carb. 8° (Range, 6°-12°); 409 eng. with 4GC carb. 6°; with spec. cam, 12°
* Hi-performance engine, 8°
** With solid lifters, 12°
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 283, 327, 409 engs. 5¼-6½ lb.; 409 eng. with special cam 7¼-8½ lb.; at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. WCFB	1	index	index
4-bbl. AFB 327 eng.	1½	1 lean	index*
409 eng.	1½	2 lean	—
(2) 4-bbl. 409 eng.	1½-2	2 rich	—
ROCHESTER			
1963 2-bbl. 2GC	1½	1 lean ●	inde[illegible]
1964 2-bbl. 2GV	1½	1 lean ■	1 lea[illegible]
4-bbl. 4GC	1-1½	index	inde[illegible]

* 1964, 1 lean
● Air conditioning equipped, index
■ One-half rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans.: 450-500 rpm; except 409 eng. with Ser. No. suffix R/S 750-850 rpm; QA/QB 950-1000
Auto. Trans.: 1963 425-475 rpm; 1964 450-500 rpm in DR. Set speed for smooth idle, no creep
1964: Air conditioning, set to normal idle speed, unit turned ON, idle compensator held closed

VALVE CLEARANCES

(engine hot and running)
409 Ser. No. suffix R/S: In. .012", ex. .020"; high speed, in. .018", ex. .030". Ser. No. suffix QA/QB in. & ex. .025"; high speed, in. & ex. .030"
Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
409-cu. in. engine	22*	21*
1963 283-, 327-cu. in. eng.	18½*	17½*
1964 283-cu. in. engine	17*	16*
1964 327-cu. in. engine	16†*	15†*

* With air conditioning, add 2 quarts
† 300 hp engine, with heater 18 quarts, without heater, 17 quarts
Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

Steering Gear .... SG
★ 1963
36 1964
1963 and some early 1964, plug; maintain level to fill plug hole. Other 1964, remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature and wheels in straight ahead position, fill to FULL mark on gage

Crankcase Dipstick .... Check level
409-cu. in. engine, right side at front

★ **Brake Master Cylinder** (cover or plug) ...... HB
Fill to ¼ inch below top of fill hole

★ **Oil Filter** (under car) .... Replace
Add extra quart oil
More often with prolonged dusty driving

OC **PCV System** .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

★ **Front Suspension and Steering Linkage** ...... (8 or 10 fittings) CL

Clutch Cross Shaft CL
★ 1963 (fitting)
36 1964 (plug)
Install fitting to lubricate

★ **Parking Brake Cables and Pulleys** ..... Coat CL

★ **Powerglide Control Shaft Linkage** ..... Coat CL

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; with overdrive, 3 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

30 **Universal Joints** 1963 .... Repack WB
More often under adverse conditions
1964, no service required

★ **Parking Brake Cable Guides** .... Coat CL

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK .... Gallons

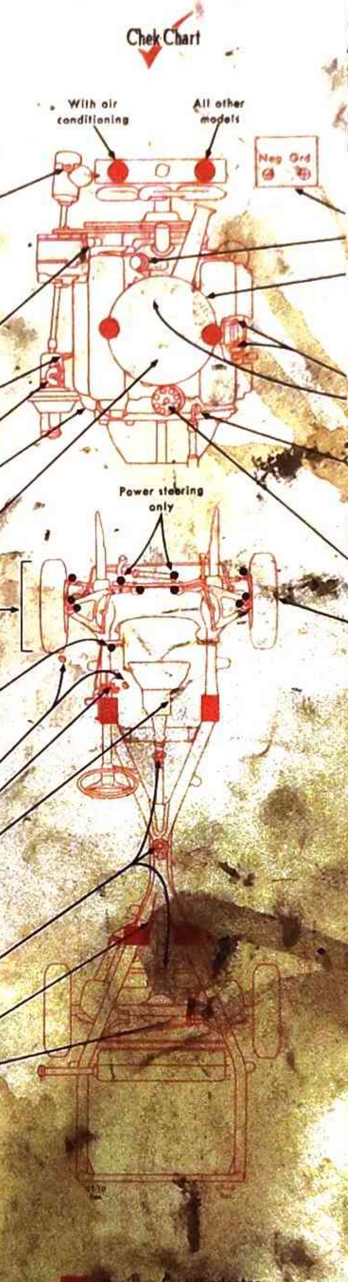
	Gallons
Station wagon	19
All other models	20

TIRES

Pressure	Front	Rear
7.00-14, 7.50-14, 8.00-14	24	24
Station wagons	24*	28*

* With heavy loads, front 22, rear 30

6 Rotate tires, Method B



▬ Position for lift adapter
● Lubrication fitting
▬ Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°
CAPACITY 4 quarts, except 409-cu. in. engine, 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service
Air Cleaner Element .... Service
Dry type .... Check 12
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
Polyurethane .... Wash and oil MO 12
More often with prolonged dusty driving
Manifold Heat Control Valve .... MH C
Fuel Filter Element .... Replace
In carburetor fuel inlet C
In bowl-type fuel filter 12

TRANSMISSION, Automatic .. AF

Check level, fluid warm, eng. idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
1963, remove pan; 1964, remove plug or pan
More often for heavy-duty operation

Distributor Cam Lubricator
Rotate end for end 12
Replace 24
Front Wheel Bearings .... Repack WB
1963 30
1964 36
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF
Power brake (engine stopped), power brake slave cylinder, power brake valve **LR, RR, RF, LF**

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
30 Every 30,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter element in carburetor fuel inlet if flooding occurs
Lubricate manifold heat control valve if shaft is not free

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CL Chassis Lubricant, Water Resistant EP Type
HB Hydra[illegible]rake Fluid, Heavy-Duty SAE 70R[illegible]
MH Graphite mixed with alcohol
MO Motor Oil
MP* Multi-Purpose Gear Lubricant, Meeting Specification MIL-L-2105B
SG Steering Gear Lubricant
WB Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET V-8

1965 Impala, Bel Air, Biscayne

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
283 engine	22F	44
Air conditioning	24	53
327, 409 engines	24	61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
283 engine	150
327 engine	160
409 engine	150

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 45 283 eng.; for continuous heavy-duty operation, 44. AC 44 327 eng.; for continuous heavy-duty operation, 43. AC 43N 409 eng., for continuous heavy-duty operation, C42N
Gap: .035"
Torque: 25 ft. lb.

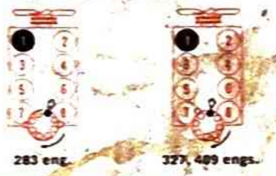
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 28°-32°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



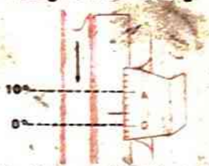
283 eng. 327, 409 engs.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
283, 327 250 hp. engs. 4° (Range, 4°-8°); 327 300 hp. eng. 8° (Range, 6°-12°); 409 340 hp. eng. 6° (Range, 4°-8°); 409 400 hp. eng. 12° (Range, 10°-14°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 283, 327 engines, 5¼-6½ lb.; 409 engines, 7¼-8½ lb.; at idle to 1000 rpm
Volume: One pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB 327 eng.	1½	1 lean	1 lean
AFB 409 eng.	1½	2 lean	2 lean
4-bbl. WCFB	1½	index	index
ROCHESTER			
2-bbl. 2GV	1½	*	*
4-bbl. 4GC	1½	index	index

* One-half rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans.: 409 400 hp. eng. 750-850 rpm; others 450-500 rpm
Auto. Trans.: 409 400 hp. eng. 750-850 rpm; others 450-500 rpm, in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

(engine hot and running)
409 400 hp. engine: intake .025"; exhaust .025"; for sustained high speed, intake .030" exhaust .030"
Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts With Heater
283-cu. in. engine	17*
327-cu. in. engine	16*, 18†
409-cu. in. engine	22*

* With air conditioning, add 2 quarts
† 327-cu. in. 300 hp engine
Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature, fill to FULL mark on gage

OC **PCV System** .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

36 **Manual Steering Gear** CL
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out of other hole. Replace screws

Crankcase Dipstick .... Check level
409-cu. in. engine, right side at front

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Oil Filter** (under car) .... Replace
Add extra quart oil
More often with prolonged dusty driving

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

36 **Clutch Cross Shaft** (plug) CL
Install fitting to lubricate

★ **Powerglide Control Shaft Linkage** .... Coat CL

★ **Parking Brake Cable** .... Coat CL

TRANSMISSION, Manual .... 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; with overdrive, 3 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

★ **Parking Brake Cable Guides** .... Coat CL

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3½ pints except station wagons and models with 327 or 409-cu. in. engines, 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK

	Gallons
Station wagon	23½
All other models	20

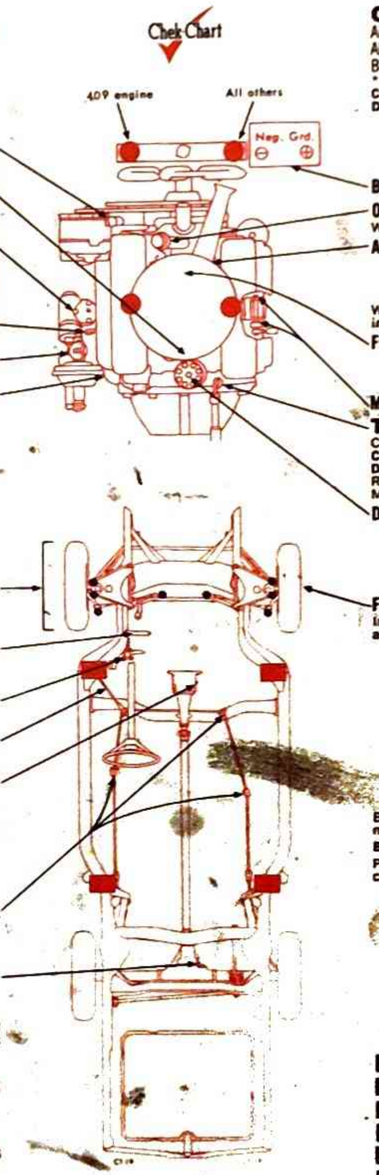
TIRES

Pressure	Front	Rear
7.35-14, 7.75-14, 8.25-14	24	24*
Station wagon	24	28

* With heavy load, 30; 8-ply rating tires, 40

6 Rotate tires, Method B

Chek Chart



CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service

Air Cleaner Element .... Service
Dry type .... Check 12
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
With closed PCV system, also clean flame arrester inside air cleaner housing

Fuel Filter Element .... Replace
In carburetor fuel inlet C
In bowl-type fuel filter 12

Manifold Heat Control Valve .... MH C

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
Remove drain plug
More often for heavy-duty operation

Distributor Cam Lubricator
Rotate, end for end 12
Replace 24

Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb. while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF
Power brake (engine stopped), power brake slave cylinder, power brake valve LR, RR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter element if carburetor flooding occurs
[illegible]ricate manifold heat control valve if [illegible]aft is not free
[illegible]ack front wheel bearings whenever wheels are removed for brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

1964

1965

CHEVROLET CHEVELLE 6

1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44
Air conditioning	24	53
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	130

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

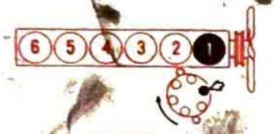
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

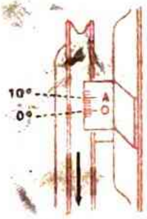


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
194 eng., 8° (Range: 1964, 6°-10°, 1965, 6°-14°)
230 eng., 4° (Range 4°-8°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 1964 3½-4½ lb.; 1965 3¼-4½ lb.; at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
ROCHESTER 1-bbl. BV	1½	*	*

* One rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 480-500 rpm in DRIVE*
* Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
Air conditioning, set to normal idle speed with unit turned Off and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	12	11
With air conditioning	13	12

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

★ Power Steering Reservoir .... AF
With fluid at operating temperature, fill to FULL mark on gage

36 Manual Steering Gear CL
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

C Fuel Filter Element .... Replace
Located in carburetor fuel inlet

C Manifold Heat Control Valve .... MH

Air Cleaner Element .... Service
12 Polyurethane .... Wash and oil MO
More often with prolonged dusty driving
With closed PCV system, also clean flame arrester in air cleaner housing

★ Brake Master Cylinder (cover) .... HB
Fill to ¼ inch below top of reservoir

★ Front Suspension and Steering Linkage .... (8 fittings) CL

36 Clutch Cross Shaft (plug) CL
Install fitting to lubricate

★ Powerglide Control Shaft Linkage .... Coat CL

★ Parking Brake Cables .... Coat CL

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints; with overdrive, 3 pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

★ Parking Brake Cable Guides .... Coat CL

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3½ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK .... Gallons

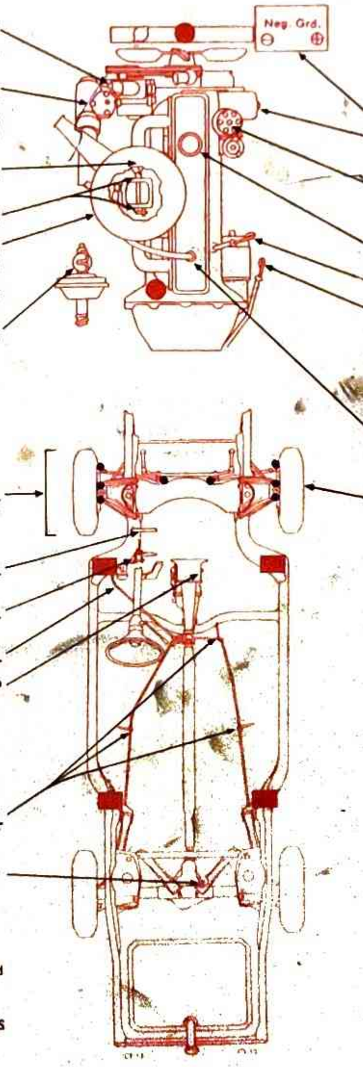
All models 20

TIRES

Pressure	Front	Rear
6.50-14, 6.95-14, 7.00-14, 7.50-14	24*	24†
Station Wagon	24	28†
Pick-Up	24	24†

* With heavy load, 28
† With heavy load, 30

6 Rotate tires, Method B



CRANKCASE

		"MS" MO
Above +32	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°

CAPACITY 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter .... Replace ★
Add extra quart oil
More often with prolonged dusty driving

Distributor Cam Lubricator
Rotate 180° 12
Replace 24

Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service

Crankcase Dipstick .... Check level

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts*
DRAIN and REFILL 12
Remove plug or pan
More often for heavy-duty operation
* Heavy-duty transmission with drain plug in converter, 9 quarts

PCV System .... Check OC
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat: ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: LR, RR, RF, LF

Power brake (engine stopped), power brake slave cylinder, power brake valve LR, RR, RF, LF

KEY TO INTERVALS

- ★ Every 6,000 miles or 6 months
- 6 Every 6,000 miles
- 12 Every 12,000 miles
- 24 Every 24,000 miles
- 36 Every 36,000 miles
- OC Every crankcase oil change
- C Conditional service
  - Replace fuel filter element if carburetor flooding occurs
  - Lubricate manifold heat control valve if shaft is not free
  - Repack front wheel bearings whenever wheels are removed for brake service

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET CHEVELLE V-8

1964-65 All Models.

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
283 engine	22F	44
Air conditioning	24	53
327 engine	24	61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
1964	150
1965 283 engine, 2-bbl.	150
327 engine, Carter carb.	160
327 engine, Holley carb.	150

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 45: 1964, 1965 283 eng.; for continuous heavy-duty operation, 44
AC 44: 1965 327 eng.; for continuous heavy-duty operation, 43
Gap: .035"
Torque: 25 ft. lb.

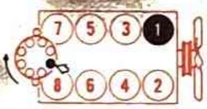
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 28°-32°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

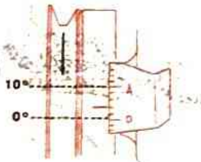


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1964, 4° (Range, 4°-8°)
1965: 283, 327 eng. 4GC carb. 4° (Range, 4°-8°)
327 eng. Carter or Holley carb. 8° (Range, 6°-12°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 5¼-6½ lb.* at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm
* 327 eng. Holley carb. 6-7½ lb.

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1½	1 lean	1 lean
HOLLEY			
4-bbl.	1½	3 lean	3 lean
ROCHESTER			
2-bbl. 2GV	1½	*	*
4-bbl. 4GC	1½	index	index

* One-half rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans.: 1964 475-525 rpm; 1965 450-500 rpm*
Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed
* 327 eng. Holley carb. 650-750 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
283-cu. in. eng.	17*	16*
327-cu. in. 250 hp eng.	16*	15*
327-cu. in. 300 hp eng.	18*	17*
327-cu. in. 350 hp eng.	19*	18*

* With air conditioning, add 1 quart

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

36 **Manual Steering Gear** CL
Remove forward and outboard steering gear cover atttaching screws. Inject lubricant into forward screw hole until lubricant comes out of other hole. Replace screws

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature, fill to FULL mark on gage

OC **PCV System** .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

Crankcase Dipstick .... Check level

★ **Brake Master Cylinder** (cover or plug) ...... HB
Fill to ¼ inch below top of reservoir

★ **Oil Filter** (under car) .... Replace
Add extra quart oil
More often with prolonged dusty driving

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

36 **Clutch Cross Shaft** (plug) CL
Install fitting to lubricate

★ **Powerglide Control Shaft Linkage** ..... Coat CL

★ **Parking Brake Cables** .... Coat CL

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; with overdrive, 3 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended
Overdrive drain and fill thru transmission

★ **Parking Brake Cable Guides** .... Coat CL

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3½ pints; with 327-cu. in. engine, 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK .... Gallons

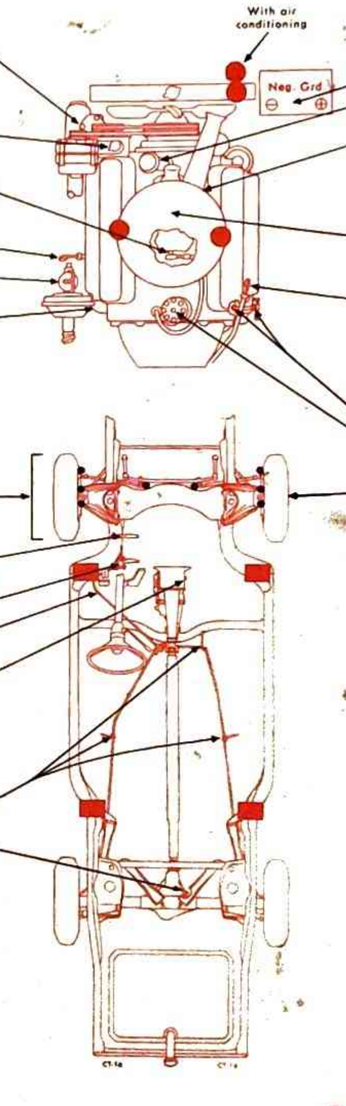
All models 20

TIRES

TIRES .... Pressure	Front	Rear
6.50-14, 6.95-14, 7.00-14, 7.35-14, 7.50-14	24*	24†
Station Wagon	24	28†
Pick-Up	24	24†

* With heavy load, 26
† With heavy load, 30

6 **Rotate tires, Method B**



CRANKCASE

CRANKCASE	"MS"	MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service

Air Cleaner Element .... Service
Dry type .... Check 12
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
With closed PCV system, also clean flame arrester in air cleaner housing

Fuel Filter Element .... Replace
In carburetor fuel inlet C
In bowl-type fuel filter 12

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts*
DRAIN and REFILL 12
Remove plug or pan
More often for heavy-duty operation
* Heavy-duty transmission with drain plug in converter, 9 quarts

Manifold Heat Control Valve .... MH C

Distributor Cam Lubricator
Rotate, end for end 12
Replace 24

Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: LR, RR, RF, LF

Power brake (engine stopped), power brake slave cylinder, power brake valve LR, RR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter element if carburetor flooding occurs
Lubricate manifold heat control valve if shaft is not free
Repack front wheel bearings whenever wheels are removed for brake service

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET CHEVY II 4, 6

1962 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F 24T	42 70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 130

Maximum variation between cylinders, less than 20 psi

SPARK PLUGS

AC 46N
Gap: .035"
Torque: 25 ft. lb.

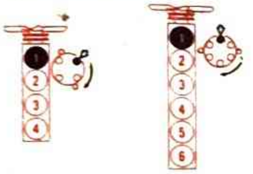
IGNITION POINTS

Delco
Gap: .016", used; .019", new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

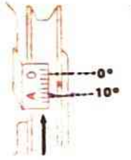


Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 500 rpm
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4-cyl., 4°; 6-cyl., 8°
(Each line equals 2°)

FUEL PUMP

AC
Pressure: 3½-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
4-cyl. 1-bbl. B	2	manual index	manual index
6-cyl. 1-bbl. BC	2		

ENGINE IDLE SPEED

Manual Trans. 500 rpm
Auto. Trans. 500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
4-cyl.	9	8½
6-cyl.	12	11½

Cooling system pressure, 13 pounds

★ **Power Steering Reservoir** ....AF
Fill to FULL mark on gage

★ **Generator** (2 oil cups)........MO
Do not overfill front cup

Air Cleaner Element........Service
4 Polyurethane....Wash and oil 10W-30 **MO**

C **Manifold Heat Control Valve**........**MH**

25 **Steering Gear**........**SG**
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Brake Master Cylinder** (cover)........**HB**
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage**........(13 or 14 fittings) **CL**

★ **Clutch Cross Shaft**........**CL**

25 **Powerglide Control Shaft Linkage**........**WG**

★ **Parking Brake Cable**........Coat **WG**

TRANSMISSION, Manual ..90 MP

★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended

25 **Universal Joints**........Repack **WB**

★ **Parking Brake Cable**........Coat **WG**

DIFFERENTIAL ....90 MP*

★ Maintain level to fill plug hole
CAPACITY 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

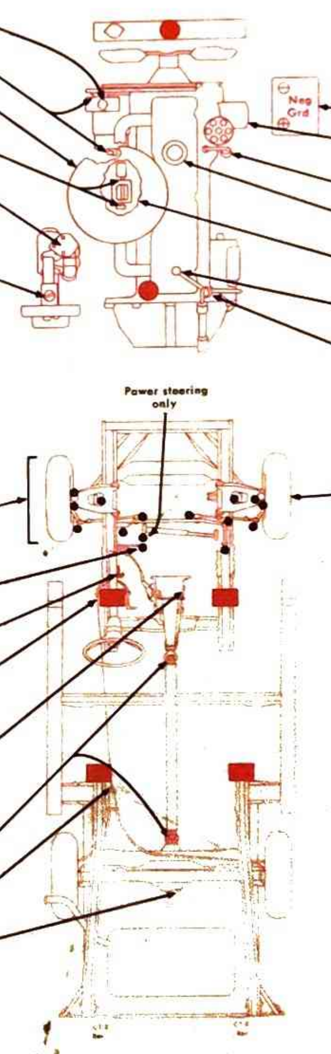
GAS TANK ....Gallons

All models 16

TIRES

Pressure	Front	Rear
6.00-13	24	24
6.50-13, station wagon	24	28

5 Rotate tires, Method B, then balance wheels



CRANKCASE

	"MS"	MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

*30 may be used for sustained high speed above +90

CAPACITY 4-cyl., 3½ quarts; 6-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery........Test and fill ★

Oil Filter........Replace 4
4-cyl., add extra pint oil; 6-cyl., extra quart

Crankcase Dipstick........Check level

Oil Fill Cap........Wash and oil **MO** 4
Check at engine tune-up

Fuel Filter Element........Replace C
Located in carburetor fuel inlet

PCV System Valve........**CC** 10
Remove and clean valve and hose

TRANSMISSION, Automatic ..AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 1½ quarts
DRAIN and REFILL........12
Remove oil pan
More often for heavy-duty operation

Front Wheel Bearings........Repack **WB** 10
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ½ turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:

1. Loosen parking brake cable adjustment
2. Turn star wheel adjuster until light uniform drag is felt when turning drum
3. Back off adjuster 12 notches
4. Repeat procedure at each wheel
5. Readjust parking brake cable

Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ Every 1,000 miles
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
5 Every 5,000 miles
10 Every 10,000 miles
12 Every 12,000 miles
25 Every 25,000 miles
C Conditional service
Lubricate manifold heat control valve if shaft is not free
Replace fuel filter if carburetor flooding occurs

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CC Carburetor Cleaner
CL Chassis Lubricant
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH Graphite mixed with alcohol
MO Motor Oil
MP* Multi-Purpose Gear Lubricant
SG Steering Gear Lubricant
WB Wheel Bearing Grease
WG White Waterproof Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET CHEVY II 4, 6

1963-65 All Models

1963
1964
1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44
Air conditioning	24	53
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 130
Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; for continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

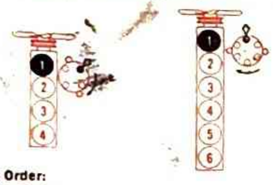
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

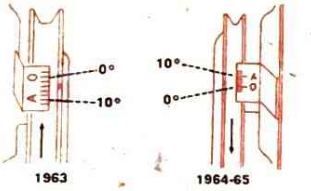


Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 500 rpm
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4-cyl. 4° (Range, 4°-8°)
6-cyl. 194 eng., 8° (Range: 1964, 6°-10°; 1965, 6°-14°)
230 eng., 4° (Range, 4°-8°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 1963-64 3½-4½ lb.; 1965 3¼-4½ lb.; at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-cyl. 1-bbl. YF	1½	manual	manual
ROCHESTER			
6-cyl. 1-bbl. BV	1½	*	*

* One rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Manual Trans.: 1963 475-525 rpm; 1964-65 450-500 rpm
Auto. Trans.: 1963 475-525 rpm; 1964-65 450-500 rpm, in DRIVE*

* Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
4-cyl.	9	8
6-cyl.	12	11

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

★ **Power Steering Reservoir** ....AF
With fluid at operating temperature and wheels in straight ahead position, fill to FULL mark on gage

Air Cleaner Element ....Service
12 Polyurethane ....Wash and oil **MO**
More often with prolonged dusty driving
With closed PCV system, also clean flame arrester in air cleaner housing

C **Manifold Heat Control Valve** ....MH

Steering Gear CL
30 1963
36 1964-65
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Brake Master Cylinder** (cover) ....HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .....(10 or 12 fittings) CL

Clutch Cross Shaft CL
★ 1963
36 1964-65

★ **Powerglide Control Shaft Linkage** .....Coat CL

★ **Parking Brake Cable** ....Coat CL

TRANSMISSION, Manual ..80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended

30 **Universal Joints** 1963 ....Repack **WB**
More often under adverse conditions
1964-65, no service required

★ **Parking Brake Cable** ....Coat CL

DIFFERENTIAL ....80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
1963, plug at rear of housing
CAPACITY 3½ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK ....Gallons

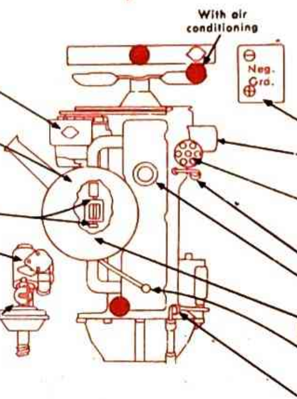
All models 16

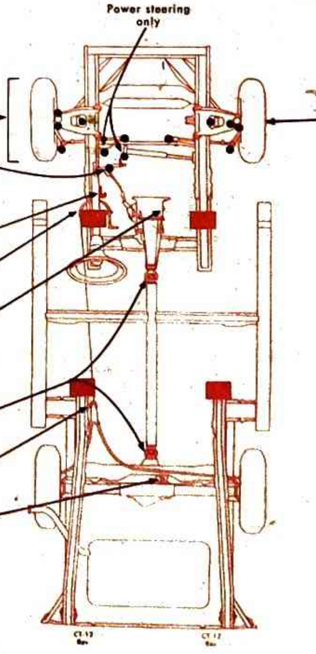
TIRES

...........Pressure	Front	Rear
6.00-13, 6.50-13, 6.50-14	24	24*
Station wagons	24	28*

* With heavy loads, 30

6 **Rotate tires, Method B**





🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE ....“MS” MO

Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°
CAPACITY 4-cyl., 3½ quarts; 6-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery ....Test and fill ★
Oil Filter ....Replace ★
4-cyl., add extra pint oil; 6-cyl., extra quart
More often with prolonged dusty driving
Distributor Cam Lubricator
Rotate 180° 12
Replace 24
Crankcase Dipstick ....Check level
Oil Fill Cap ....Wash and oil MO OC
With closed PCV system, sealed cap, no service
Fuel Filter Element ....Replace C
Located in carburetor fuel inlet
PCV System ....Check OC
Valve type, test valve and replace if necessary; fixed orifice type. clean as required. Clean hoses

TRANSMISSION, Automatic ..AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
Remove plug or pan
More often for heavy-duty operation

Front Wheel Bearings ....Repack **WB**
1963 30
1964-65 C
Initial torque, 12 ft.lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
30 Every 30,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Lubricate manifold heat control valve if shaft is not free
Replace fuel filter element if carburetor flooding occurs
Repack front wheel bearings whenever wheels are removed for brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

284 7257

1964

1965

2836337

CHEVROLET CHEVY II V-8

1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44
Air conditioning	24	53

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
1964	150
1965 283 engine, 2-bbl. carb.	150
327 engine, 4-bbl. carb.	160

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 45: 1964, 1965 283 eng.; for continuous heavy-duty operation, 44
AC 44: 1965 327 eng.; for continuous heavy-duty operation, 43
Gap: .035"
Torque: 2З ft. lb.

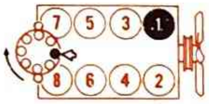
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 28°-32°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

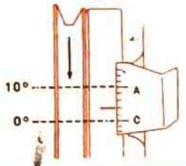


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1964, 4° (Range, 4°-8°)
1965: 283 eng.; 327 eng. 4GC carb.; 4° (Range, 4°-8°)
327 eng. AFB carb. 8° (Range, 6°-12°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 5¼-6½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1½	1 lean	1 lean
ROCHESTER			
2-bbl. 2GV	1½	*	*
4-bbl. 4GC	1½	index	index

* One-half rod diameter above top of hole in choke lever

ENGINE IDLE SPEED

Man. Trans.: 1964 475-525 rpm; 1965 450-500 rpm
Auto. Trans.: 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
Air Conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	17	16

Cooling system pressure, 13 pounds; with air conditioning, 15 pounds

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature and wheels in straight ahead position, fill to FULL mark on gage

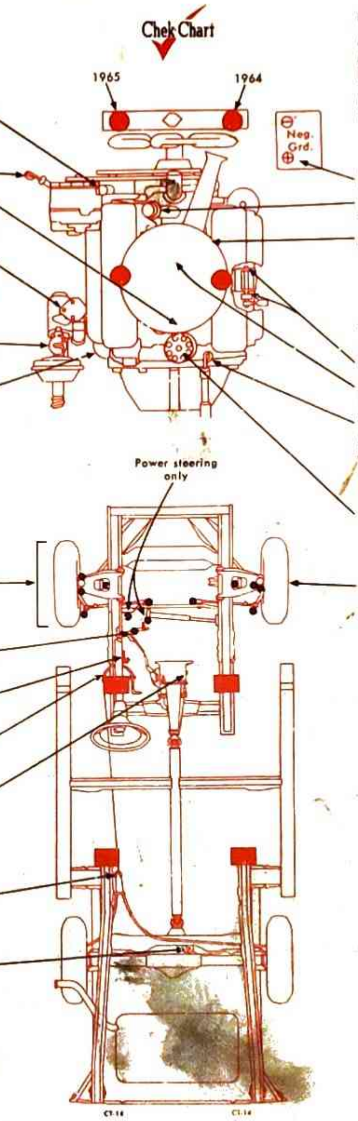
Crankcase Dipstick .... Check level

OC **PCV System** .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

36 **Steering Gear** CL
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out other hole. Replace screws

★ **Brake Master Cylinder** (cover or plug)...... HB
Fill to ¼ inch below top of fill opening

★ **Oil Filter** (under car)................ Replace
Add extra quart oil
More often with prolonged dusty driving



★ **Front Suspension and Steering Linkage**.....(10 or 12 fittings) CL

36 **Clutch Cross Shaft** CL

★ **Powerglide Control Shaft Linkage**..... Coat CL

★ **Parking Brake Cable** .... Coat CL

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, **2 pints**; 4-speed, **2½ pints**
DRAIN and REFILL Not recommended

★ **Parking Brake Cable** .... Coat CL

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3½ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint around fill plug

GAS TANK .... Gallons

All models 16

TIRES

Pressure	Front	Rear
6.50-14, 6.95-14	24	24*
Station wagon	24	28*

* With heavy load, 30

6 Rotate tires, Method B

CRANKCASE .... "MS" MO

Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high speed or above +90°
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Fill Cap .... Wash and oil MO OC
With closed PCV system, sealed cap, no service

Air Cleaner Element .... Service
Dry type .... Check 12
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
Polyurethane .... Wash and oil MO 12
More often with prolonged dusty driving
With closed PCV system, also clean flame arrester in air cleaner housing

Manifold Heat Control Valve .... MH C

Fuel Filter Element .... Replace C
Located in carburetor fuel inlet

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL 12
Remove plug or pan
More often for heavy-duty operation

Distributor Cam Lubricator
Rotate, end for end 12
Replace 24

Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

- ★ Every 6,000 miles or 6 months
- 6 Every 6,000 miles
- 12 Every 12,000 miles
- 24 Every 24,000 miles
- 36 Every 36,000 miles
- OC Every crankcase oil change
- C Conditional service
  - Lubricate manifold heat control valve if shaft is not free
  - Replace fuel filter element if carburetor flooding occurs
  - Repack front wheel bearings whenever wheels are removed for brake service

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET CORVAIR

1960-62 All Models Except 95

1960
1961
1962

ENGINE LID RELEASE: Sedan, top, right of rear license plate
Station wagon, top, center of rear access panel

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	53	35, 42

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All .... minimum 130
Maximum variation between cylinders, less than 20 psi

SPARK PLUGS

AC: 1960-61 Turbo-Air, 46FF; Super Turbo-Air, Monza with Powerglide and Turbocharged engines, 44FF. 1962, 44FF; Turbocharged, competition use, 42FF
Gap: .035" Torque: 20-25 ft. lb.

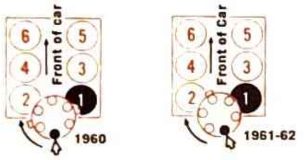
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence

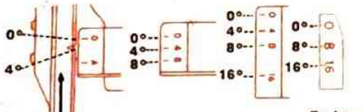


Firing Order: 1, 4, 5, 2, 3, 6

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening; except Turbocharged engines
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
   Note color of distributor oiler. Following colors are used: Bright (Cadmium-Zinc), copper, and black. See Timing Setting for recommendations
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1960 1st type **1960 2nd type** **1960 late, 1961-62** **Turbo-charged engines**

Timing Setting (Before Top Dead Center):
Turbo-Air: Manual Trans. 4° (Range 4°-8°)
Super Turbo-Air: Manual Trans. 12° (Range 12°-16°)
Automatic Trans. 12° (Range 12°-16°)
Note: Advance timing as far as possible within specifications, unless detonation (spark knock) occurs
Turbocharged, Manual Trans. 24°

FUEL PUMP

AC model 4704
Pressure: 4-5 lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle speed

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1962 (1) 1-bbl. YH	¾	1 rich	—
ROCHESTER			
1960 (2) 1-bbl. H	1½	index	index
1961 (2) 1-bbl. H	1½	manual	manual
1962 (2) 1-bbl. H	1½	index	index

ENGINE IDLE SPEED

Manual Trans.: Turbo-Air, 450-500 rpm
Super Turbo-Air, 600-650 rpm
Turbocharged, 850 rpm
Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

★ **Steering Gear** (plug) .... **SG**
Maintain level to fill plug hole

★ **Front Suspension and Steering Linkage** .... (8 fittings) **CL**

★ **Brake Master Cylinder** (plug) .... **HB**
Service thru luggage compartment
Fill to level mark

10 **Parking Brake and Clutch Cable and Pulleys** .... Coat **WG**
Service under dash and by removing front portion of tunnel plate under car

10 **Gearshift Lever Ball & Socket Pivot** ... Coat **WG**
Service thru floor and by removing front portion of tunnel plate under car

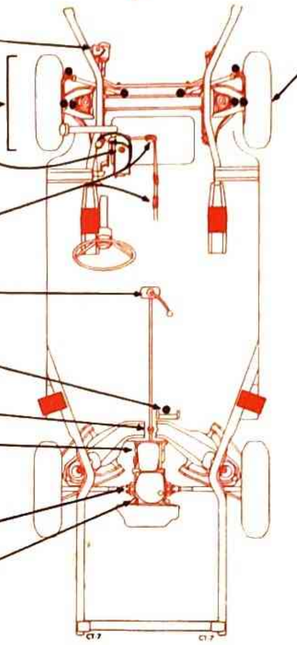
★ **Clutch Cross Shaft** .... **CL**

5 **Gearshift Control Shaft Universal Joint** .... Coat **WG**

TRANSMISSION, Manual .. 80 **MP**
Multi-Viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, **2 pints; 4-speed, 3 pints**
10 **DRAIN and REFILL**

25 **Universal Joints** Both sides .... Repack **WB**
More often under adverse conditions

DIFFERENTIAL .... 80 **MP***
Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3 pints
10 **DRAIN and REFILL**
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug



LIFTING CAUTION
Never lift car with bumper jack

Front Wheel Bearings .... Repack **WB** 10
Initial torque, 7 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1. Loosen parking brake cable adjustment nut
2. Using a suitable tool inserted into adjustment slot in backing plate, expand shoes until a light uniform drag is felt when revolving drum
3. Back off adjustment 12 notches
4. Repeat operation at each wheel
5. Readjust parking brake cable

Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

- ★ Every 1,000 miles
- 2 Every 2,000 miles
- 4 Every 4,000 miles or 6 months
- 5 Every 5,000 miles
- 10 Every 10,000 miles
- 12 Every 12,000 miles
- 15 Every 15,000 miles
- 25 Every 25,000 miles
- C Conditional service
  1962, except Monza Spyder, replace fuel filter elements only if carburetor flooding occurs

GAS TANK .... Gallons

1960	11
1961-62	14

TIRES .... Pressure	Front	Rear
6.50-13, 6.70-13	15	26
7.00-13 station wagon	15	26

5 Rotate tires, Method D, then balance wheels

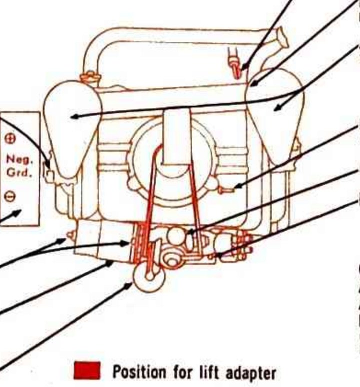
Fuel Filter Element .... Replace
In carburetor fuel inlet, both sides
15 1960-61, more often if flooding occurs
C 1962, only if flooding occurs
10 Monza Spyder Turbocharged
One filter in fuel line at left of air cleaner

★ **Battery** .... Test and fill
1960 models, right side

★ **Generator** (2 oil cups) .... **MO**
Do not overfill cup near pulley

5 **Engine Oil Cooler** .... Clean
Remove cover, clean with brush or compressed air

4 **Oil Filter** .... Replace
Add extra pint oil



TRANSMISSION, Automatic .. **AF**
Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY, refill approx. 3 quarts
Do not overfill
DRAIN and REFILL 12
Disconnect fill tube
More often for heavy-duty operation

PCV System Valve .... **CC** 5
Remove and clean valve; also clean hose if clogged

Air Cleaner Elements .... Service
1960 and Monza Spyder, have one air cleaner
Polyurethane .... Wash and oil 10W **MO** 2
Monza Spyder Turbocharged 4

Crankcase Dipstick .... Check level
Station wagon, dipstick attached to oil fill cap

Oil Fill Cap

Distributor Shaft (oil cup) 1960-61 ... 10W **MO** ★

CRANKCASE		"MS" **MO**
Above +32°	30	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

🟥 Position for lift adapter
● Lubrication fitting

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

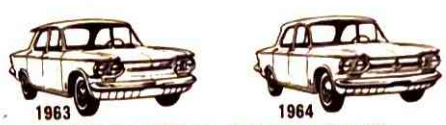
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Positraction, use same lubricant recommended for standard differential

CHEVROLET CORVAIR

1963-64 All Models Except 95



ENGINE LID RELEASE: Top, right of rear license plate

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	53	42

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All ....minimum 130
Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC: Turbo-Air, 46FF; Super Turbo-Air, Monza with Powerglide and Turbo-Charged engines, 44FF; Turbo-Charged, competition use, 42FF; 1963 Turbo-Air, for continuous heavy-duty operation, 44FF
Gap: .035", except 1964 44FF, .030"
Torque: 20-25 ft. lb.

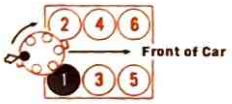
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

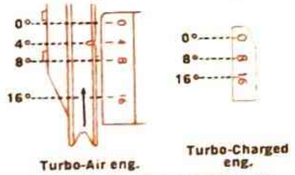


Firing Order: 1, 4, 5, 2, 3, 6

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening; except Turbo-Charged engines
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Turbo-Air: Manual Trans. 4° (Range 4°-8°)
Super Turbo-Air: Manual Trans. 12° (Range 12°-16°)
Auto. Trans. 12° (Range 12°-16°)
Note: Advance timing as far as possible within specifications unless detonation (spark knock) occurs
Turbo-Charged: Manual Trans. 24°

FUEL PUMP

AC mechanical
Pressure: 4-5 lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. YH	¾	1 lean	—
ROCHESTER			
(2) 1-bbl. H	1½	*	*

* 2 turns up from free entry in lever

ENGINE IDLE SPEED

Manual Trans.: Turbo-Air, 450-500 rpm
Super Turbo-Air, 600-650 rpm
Turbo-Charged, 850 rpm

Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts
1964 Air conditioning, set to normal idle speed with unit turned ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

Steering Gear (plug) ....SG
Maintain level to fill plug hole
★ 1963
36 1964

★ **Front Suspension and Steering Linkage** ....(8 fittings) CL

★ **Brake Master Cylinder** (cover or plug)......HB
Service thru luggage compartment
Fill to ¼ inch below top of fill opening

12 **Parking Brake and Clutch Cable and Pulleys**.........Coat CL
Service under dash and by removing front portion of tunnel plate under car

12 **Gearshift Lever Ball & Socket Pivot**...Coat WG
Service thru floor and by removing front portion of tunnel plate under car

Clutch Cross Shaft.....................CL
★ 1963 (fitting)
36 1964 (plug)
Install fitting to lubricate

12 **Gearshift Control Shaft Connector**....Coat CL

TRANSMISSION, Manual..80 MP
Multi-viscosity 80-90 may be used
★ 1963, maintain level to fill plug hole
1964, check lubricant level with axle dipstick. See DIFFERENTIAL for filling instructions
CAPACITY 3-speed, **2 pints; 4**-speed, **3 pints**
DRAIN and REFILL Not recommended

30 **Universal Joints** Both sides.......Repack WB
More often under adverse conditions
1963 only. 1964, no service required

DIFFERENTIAL...........80 MP*
Multi-viscosity 80-90 may be used
★ 1963, maintain level to fill plug hole
1964, check lubricant level with axle dipstick located in engine compartment, when checking crankcase. Manual transmission models, add lubricant through fill hole in transmission to level plug hole in differential. Powerglide models, fill differential thru level plug hole in differential
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK	Gallons
All models	14

TIRES Pressure	Front	Rear
6.50-13, 6.70-13	15	26

6 Rotate tires, Method B

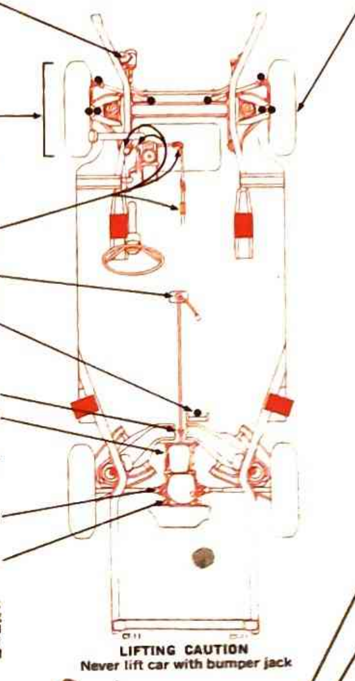
Fuel Filter Element.....................Replace
C In carburetor fuel inlet, both sides
12 Turbo-Charged models
One filter in fuel line at left of air cleaner

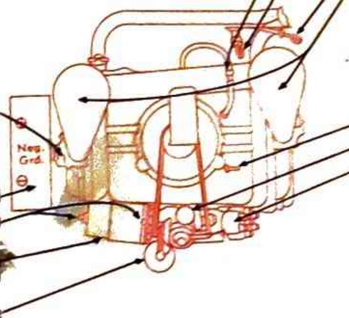
★ **Battery**.....................Test and fill

12 **Generator** (2 oil cups)....................MO
Do not overfill cup near pulley

12 **Engine Oil Cooler**...................Clean
Remove cover, clean with brush or compressed air

★ **Oil Filter** ....Replace
Add extra pint oil
More often with prolonged dusty driving





🟥 Position for lift adapter
● Lubrication fitting

Front Wheel Bearings............Repack WB
1963 30
1964 36
Initial torque, 8 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ¼ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
30 Every 30,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter elements if carburetor flooding occurs

PCV System ....Check OC
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses
No valve on Turbo-Charged models

TRANSMISSION, Automatic..AF
Check level, fluid warm, eng. idling in NEUTRAL ★
Do not overfill
CAPACITY Refill 3 quarts
DRAIN and REFILL...............................12
Remove fill tube to drain
More often for heavy-duty operation

Axle Dipstick 1964.............Check level

Air Cleaner Elements...............Service
Some models have only one air cleaner
Dry type ....Check 12
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
Oil bath ....Wash and fill MO 6
Summer, 50; winter, 20
Polyurethane ....Wash and oil MO 6
More often with prolonged dusty driving

Crankcase Dipstick.............Check level

Oil Fill Cap

Distributor Cam Lubricator
Rotate 180° 12
Replace 24

CRANKCASE	"MS"	MO
Above +32°	30	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Positraction, use same lubricant as standard axle

CHEVROLET CORVAIR

1965 All Models Except Greenbrier

ENGINE LID RELEASE: Top, right of rear license plate

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F 24T	44 70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All .... minimum 130
Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46FF Turbo-Air 95 hp.; AC 44FF others
Gap: AC 46FF, .035"; AC 44FF, .030"
Torque: 15-20 ft. lb.

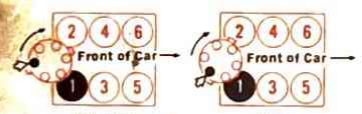
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



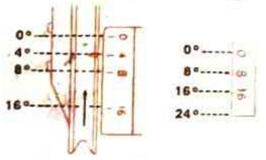
Without Air Conditioning — With Air Conditioning

Firing Order: 1, 4, 5, 2, 3, 6

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening; except Turbocharged engines
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Turbo-Air eng. — Turbocharged

Timing Setting (Before Top Dead Center):
Turbo-Air: Man. Trans. 6° (Range, 4°-8°)
Auto. Trans. 14° (Range, 12°-16°)
Super Turbo-Air: 14° (Range, 12°-16°)
4 x 1 (140 hp.): 18° (Range, 16°-20°)
Turbocharged: 24°

FUEL PUMP

AC mechanical
Pressure: 4-5 lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. YH	1½	index	—
ROCHESTER			
1-bbl. H (4 x 1 Sec.)	1½	—	—
1-bbl. HV	1½	*	*

* 2 turns up from free entry in lever

ENGINE IDLE SPEED

Manual Trans.: Turbo-Air 450-500 rpm; Super Turbo-Air, 4 x 1 600-650 rpm; Turbocharged 850 rpm

Auto. Trans.: Turbo-Air 450-500 rpm; Super Turbo-Air 600-650; in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

Air conditioning set to normal idle speed with unit turned ON and idle compensator held closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek Chart

36 Steering Gear (plug) CL
Maintain level to fill plug hole

★ Front Suspension and Steering Linkage .... (8 fittings) CL

★ Brake Master Cylinder (cover) .... HB
Service thru luggage compartment
Fill to ¼ inch below top of fill opening

12 Parking Brake and Clutch Cables and Pulleys .... Coat CL
Service under dash and by removing front portion of tunnel plate under car

12 Gearshift Lever Ball & Socket Pivot ... Coat WG
Service thru floor and by removing front portion of tunnel plate under car

36 Clutch Cross Shaft (plug) CL
Install fitting to lubricate

12 Gearshift Control Shaft Connector ..... Coat CL

TRANSMISSION, Manual .. 80 MP
Multi-viscosity 80-90 may be used
★ Check lubricant level with axle dipstick. See DIFFERENTIAL for filling instructions
CAPACITY 3-speed, 2 pints; 4-speed, 3 pints
DRAIN and REFILL Not recommended

DIFFERENTIAL .... 80 MP*
Multi-viscosity 80-90 may be used
★ Check lubricant level with axle dipstick located in engine compartment, when checking crankcase. Manual transmission models, add lubricant thru fill hole in transmission to level plug hole in differential. Powerglide models, fill differential thru level plug hole in differential
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular tag under fill plug or yellow paint on fill plug

GAS TANK	Gallons
All models	14

TIRES Pressure	Front	Rear
6.50-13	15	26

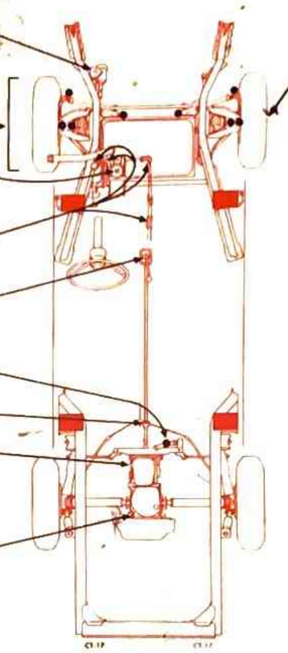
For continuous high speeds or heavy loads, front 17; rear 30
6 Rotate tires, Method B

Fuel Filter Element .... Replace
C In carburetor fuel inlet, each carburetor
12 Turbocharged models
One filter in fuel line at left of air cleaner

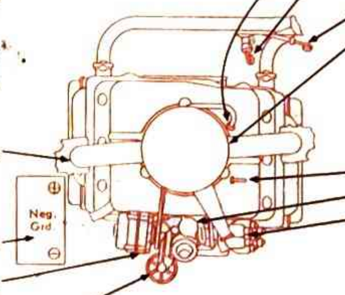
★ Battery .... Test and fill

12 Engine Oil Cooler .... Clean
Remove cover, clean with brush or compressed air

★ Oil Filter .... Replace
Add extra pint oil
More often with prolonged dusty driving



LIFTING CAUTION
Never lift car with bumper jack



Front Wheel Bearings .... Repack WB C
Initial torque, 12 ft. lb. while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

- ★ Every 6,000 miles or 6 months
- 6 Every 6,000 miles
- 12 Every 12,000 miles
- 24 Every 24,000 miles
- 36 Every 36,000 miles
- OC Every crankcase oil change
- C Conditional service
  - Replace fuel filter elements if carburetor flooding occurs
  - Repack front wheel bearings whenever wheels are removed for brake service

PCV System .... Check OC
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

TRANSMISSION, Automatic .. AF
Check level, fluid warm, engine idling, in NEUTRAL ★
Do not overfill
CAPACITY Refill 3 quarts
DRAIN and REFILL 12
Remove fill tube to drain
More often for heavy duty operation

Axle Dipstick .... Check level

Air Cleaner Elements .... Service
Some models have two air cleaners
Dry type .... Check 6
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
More often with prolonged dusty driving
Oil bath .... Wash and fill MO 6
Summer, 50; winter, 20

Crankcase Dipstick .... Check level

Oil Fill Cap

Distributor Cam Lubricator
Rotate 180° 12
Replace 24

CRANKCASE		"MS" MO
Above +32°	30	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

🟥 Position for lift adapter
● Lubrication fitting

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Positraction, use same lubricant as standard axle

1963

1964

1965

CHEVROLET CORVETTE

1963-65 All Models

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
Standard cam (Carter carbs)	160
Fuel Inj.; Special cam (Holley carbs.)	150

Maximum Variation between cylinders, 15 psi

SPARK PLUGS

AC 44 for moderate service; AC 45 for city driving only; AC 43 for heavy-duty and high output; AC 42 for extended and extreme high output

Gap: .035"

Torque: 20-25 ft. lb.

IGNITION POINTS

Delco

Gap: .016" used; .019" new

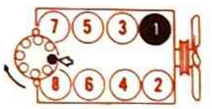
Dwell angle: 28°-32°

CONDENSER

Delco

Capacity: .18-.23 mfd

Cylinder Numbering Sequence

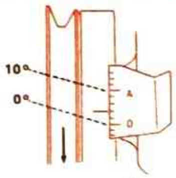


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set engine speed at idle with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
250 hp. WCFB, 4° (Range, 4°-10°)
300 hp. AFB; 350 hp. Holley; 8° (Range, 6°-12°)
365 hp. Holley; Fuel Injection; 12° (Range, 10°-14°) (Each line equals 2°)

FUEL PUMP

AC mechanical

Pressure: 1963, 1964, 1965 250, 300, 350 hp. engs. 5¼-6½ lb.; 1965 365, 375 hp. engs. 6½-7½ lb.; at idle to 1000 rpm

Volume: 1 pint in 30-45 seconds

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1½	1 lean	1 lean
4-bbl. WCFB	1	index	index
HOLLEY			
4-bbl.	1	1 lean	1 lean

ENGINE IDLE SPEED

Manual Trans.: 250, 300 hp. engs. 450-500 rpm; 350 hp. eng. 650-750 rpm; 365 hp. eng. 750-850 rpm*; Fuel injection eng. 850 rpm (Min.)**

Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

Air conditioning, set to normal idle speed with unit turned ON and idle compensator held closed

* 1963 725-775 rpm; 1964 775-825 rpm

** 1963 825-875 rpm

VALVE CLEARANCES

(engine hot)

340-, 360-hp. engs.: Intake .008"; exhaust .018"

365-, 375 hp engs.: Intake .030"; exhaust .030"

250, 300, 350 hp. engs.: Hydraulic lifters, non-adjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	With Heater	Without Heater
	Quarts	
All models	19	18

Cooling system pressure, 13 pounds

Oil Fill Cap

★ **Power Steering Reservoir** .... AF
With fluid at operating temperature and wheels in straight ahead position, fill to FULL mark on gage

Air Cleaner Element
12 Polyurethane .... Wash and oil MO
More often with prolonged dusty driving
Also clean flame arrester in air cleaner housing

Steering Gear CL
30 1963
36 1964-65
Remove forward and outboard steering gear cover attaching screws. Inject lubricant into forward screw hole until lubricant comes out of other hole. Replace screws

Crankcase Dipstick .... Check level

★ **Brake Master Cylinder** (cover or 2 caps) .... HB
Fill to ¼ inch below top of reservoir
2 fill caps on models with power brakes

★ **Parking Brake Cable and Pulley** 1964-65 ... CL

★ **Oil Filter** (under car) .... Replace
Add extra quart oil
More often with prolonged dusty driving

Distributor Cam Lubricator
12 Rotate, end for end
24 Replace

CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* Use 30 for sustained high-speed or above +90°

CAPACITY 250-, 300- and 350-hp engines, **4 quarts;** 340-, 360-, 365- and 375-hp engines, **5 quarts**

DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element .... Replace
In carburetor fuel inlet .... **C**
250-hp engine only
In fuel line **12**

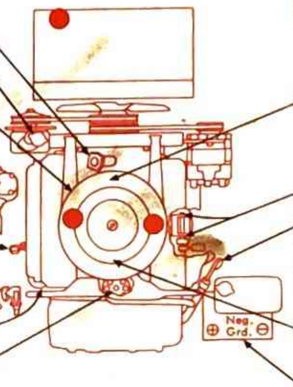
Manifold Heat Control Valve .... MH **C**

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 2 quarts
DRAIN and REFILL **12**
Remove plug or pan
More often for heavy-duty operation

PCV System .... Check **OC**
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses

Battery .... Test and fill ★
Air conditioned models, left side



★ **Front Suspension and Steering Linkage** ..... (9 or 10 fittings) CL

Clutch Cross Shaft CL
★ 1963 (fitting)
36 1964-65 (plug)
Install fitting to lubricate

TRANSMISSION, Manual .. 80 MP

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

30 **Universal Joints** 1963 .... Repack WB
More often under adverse conditions
1964-65, no service required

30 **Rear Wheel Bearings** 1963 .... Repack WB
Outer universal joints and propeller shaft must be removed
1964-65, no service required

DIFFERENTIAL .... 80 MP*

Multi-viscosity 80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 3¾ pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK

	Gallons
All models	20

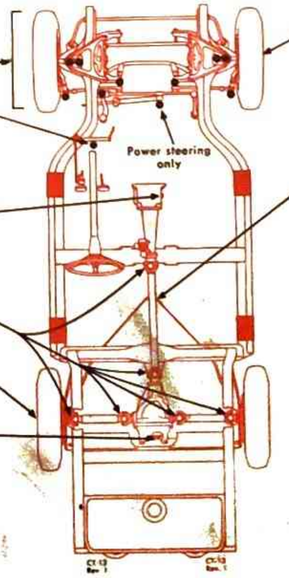
TIRES

Pressure	Front	Rear
6.70-15	24	24
7.75-15	22	24

6 Rotate tires, Method B

Front Wheel Bearings .... Repack WB
1963 .... **30**
1964-65 .... **36**
Initial torque, 12 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn. 1965 with disc brakes, brake caliper must be loosened and lifted from brake disc before wheel hub can be removed. Do not disconnect brake line

Parking Brake Idler Lever and Cables .... CL ★
1963, idler lever forward of cross member left side



BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

- ★ **Every 6,000 miles or 6 months**
- **6** **Every 6,000 miles**
- **12** **Every 12,000 miles**
- **24** **Every 24,000 miles**
- **30** **Every 30,000 miles**
- **36** **Every 36,000 miles**
- **OC** **Every crankcase oil change**
- **C** **Conditional service**
  - Replace fuel filter element in carburetor fuel inlet only if flooding occurs
  - Lubricate manifold heat control valve if shaft is not free

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHRYSLER

1960-61 All Models

1960 300F
1961 300G
1960 Others
1961 Windsor, Newport
1961 New Yorker

HOOD RELEASE: Inside, 1960; Front, 1961

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include 300 series)

BATTERY

	AABM Group No.	Amp. Hrs.
1960 All	27H	70
1961 Newport, Windsor	24H	59
	27H	70
New Yorker	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
1961 Newport	135	165*
Others	150	180**

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion J-12Y
Gap: .035"
Torque: 30 ft. lb.

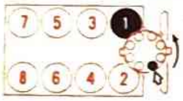
IGNITION POINTS

Chrysler 1961 New Yorker; Autolite Others
Gap: .014"-.019"
Dwell angle: 27°-32°

CONDENSER

Chrysler 1961 New Yorker; Autolite Others
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

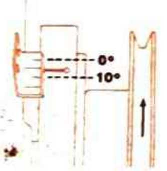


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to adapter inserted in No. 1 distributor cap tower
   Note: Do not puncture spark plug cable insulation
4. Disconnect vacuum line at distributor
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 10°

FUEL PUMP

Carter model M-2769S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
2-bbl. BBD-2923SA	1	index	index
2-bbl. BBD-2924S	1	—	index
2-bbl. BBD-3132S*	1	index	index
4-bbl. AFB-2903S	1-2	—	1 rich
4-bbl. AFB-2927S	1-2	—	2 rich
4-bbl. AFB-3108S	1½	—	2 rich
4-bbl. AFB-3134S	1½	—	2 rich
STROMBERG			
2-bbl. WWC3-188	½-⅝	1 rich	1 rich

* With closed crankcase ventilation system

ENGINE IDLE SPEED

Manual Trans. 500 rpm with headlights on high beam
Auto. Trans. 500 rpm in NEUTRAL with headlights on high beam
Air Cond. 575 rpm in DRIVE with unit turned ON with headlights on high beam

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

4 **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Battery** .... Test and fill
Caution: Do not ground positive terminal under any circumstances

★ **Power Steering Reservoir** .... **PS**
Fill to level on gage. Without gage, to base of filler neck when cold, halfway when hot

Crankcase Dipstick .... Check level

★ **Oil Fill Cap** .... Wash and oil 30 **MO**

Air Cleaner Element .... Service
5 Dry type .... Clean
15 Dry type .... Replace

★ **Manual Steering Gear** (plug) .... **MP**
Above −10°, 90; below −10°, 80; below −30°, 75

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .... (8 fittings) **CL**

★ **Torque Shaft** .... **CL**

TRANSMISSION, Manual .... AF

★ Maintain level to fill plug hole
CAPACITY 4¼ pints, refill approx. 3½ pints
20 **DRAIN and REFILL**

10 **Gearshift Lever** .... **MO**
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

20 **Universal Joints** .... Repack **UJ**
Use only 2 ounces in front joint

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 4 pints
20 **DRAIN and REFILL**
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

	Gallons
Town & Country	21
All other models	23

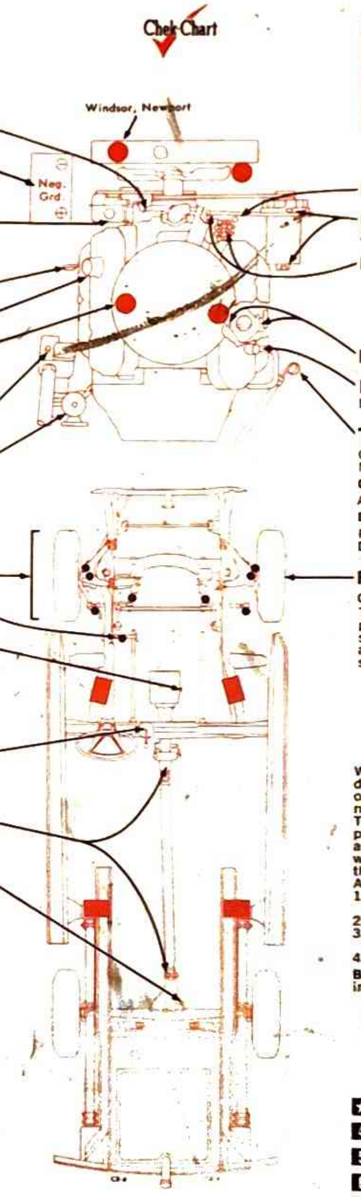
TIRES

Pressure	Front	Rear
8.00-15 300-F, -G	24	24
8.00-14 Windsor, Newport	24	22
8.50-14 Newport Town and Country	22	24*
8.50-14 Saratoga (1960)	22	22
8.50-14 New Yorker (1961)	24	22
9.00-14 New Yorker, 300-F (1960)	22	22
Town and Country	22	24*

* With heavy load, 28

For Captive-Air tires inner chamber pressure must be 4 to 6 pounds higher than outer chamber pressure shown

6 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C



🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element .... Replace **23**

Generator (2 oil cups) .... **MO** ★
Alternator, no lubrication

Distributor Shaft (oil cup) .... **MO** ★
Model 300 (grease cup) .... **CL** ★
1 turn at each lubrication period
Wick under rotor .... Sparingly **MO** **10**

Manifold Heat Control Valve Shaft .... **MH** ★

PCV System Valve .... **CC** **10**
Disassemble and clean

TRANSMISSION, Automatic .... AF

Check level, engine idling and thoroughly warm, NEUTRAL position ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	11

DRAIN and REFILL **10**
Remove 1 converter plug and disconnect fill pipe
Drain more frequently under severe service

Front Wheel Bearings .... Check **WB** **10**
Clean and repack if necessary
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Two adjustment cams are provided on each support plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in the reverse direction
Adjust the brakes as follows:

1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
5 Every 5,000 miles
6 Every 6,000 miles
10 Every 10,000 miles
15 Every 15,000 miles
20 Every 20,000 miles
23 Every 23,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grea
WB	Wheel Bearing G

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

1962
300
1962
New Yorker
1962
Newport
1963
300
1963
New Yorker
1963
Newport

HOOD RELEASE: Front

CHRYSLER

1962-63 All Models

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Newport, 300	24H	59
	27H	70
New Yorker, 300H, -J	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
New Yorker, 300, -H, -J (Auto. Trans.)	130	165*
All others	125	155**

* Maximum variation between cylinders, 25 psi
** Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: 300H, 1962 413 eng. with (2) 4-bbl. carbs.; 1963 300, Newport with dual points, J-9Y; 300J, XJ-10Y; others, J-12Y
Gap: .035"
Torque: 30 ft. lb.

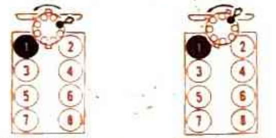
IGNITION POINTS

Chrysler: Newport, 300, New Yorker
Autolite: 300H, -J; 1963 300, Newport (dual points)
Gap: .014"-.019"
Dwell angle: 1963 New Yorker, single points, 28°-33°; others, single points and each set of dual points, 27°-32°; dual points total dwell, 34°-40°

CONDENSER

Chrysler: Newport, 300, New Yorker
Autolite: 300H, -J; 1963 300, Newport (dual points)
Capacity: .25-.285 mfd

Cylinder Numbering Sequence



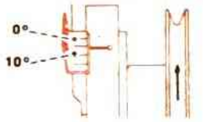
Autolite dist. Chrysler dist.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to adapter inserted in No. 1 distributor cap tower
   Note: Do not puncture spark plug cables
4. Disconnect vacuum line at distributor
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vac. line and reset to proper idle

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 300J, 12½°; others, 10°

FUEL PUMP

Carter model M-2769S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
2-bbl. BBD-3244S	1	index	index
2-bbl. BBD-3245S	1	index	index
2-bbl. BBD-3476S	¾	2 rich	2 rich
4-bbl. AFB-3251S	1-2	2 rich	2 rich
4-bbl. AFB-3256S	1-2	2 rich	2 rich
4-bbl. AFB-3259S	1-2	1 rich	1 rich
(2) 4-bbl. AFB-3505S	1-2	manual	manual
STROMBERG			
2-bbl. WWC3-201	1-1½	1 rich	1 rich
2-bbl. WWC3-221	1-1½	1 rich	1 rich

ENGINE IDLE SPEED

Manual Trans. 500 rpm* with headlights on high beam
Auto. Trans. 500 rpm* in NEUTRAL with headlights on high beam
Air Cond. 500 rpm* in DRIVE with unit turned ON with headlights on high beam
* 300H, 650 rpm; 300J, 700-750 rpm
Air Cond. 750 rpm in DRIVE with unit turned ON

VALVE CLEARANCES

(engine hot and running)
300H: Intake .015"; exhaust .024"
300J: Intake .017"; exhaust .028" (engine not running)
Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Distributor Shaft** (oil cup) .... MO
★ 300 (grease cup) CL
1 turn at each lubrication period
Wick under rotor .... Sparingly MO
TY 1963 12 1962

Crankcase Dipstick .... Check level

Oil Fill Cap .... Wash and oil 30 MO
OC 1963 8 1962

32 **Automatic Trans. Filter** (under car) .... Replace
Replace at time of transmission drain

★ **Manual Steering Gear** (plug) .... MP
Above –30°, 80; below –30°, 75

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

Front Suspension .... (4 plugs) BJ
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when relubricating, remove plug, use special gun or proper adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal, if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 4½ pints, refill approx. 3½ pints
DRAIN and REFILL
32 1962; 1963 Not recommended

32 **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP*

Above –10°, 90; below –10°, 80; below –30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963 32 1962
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

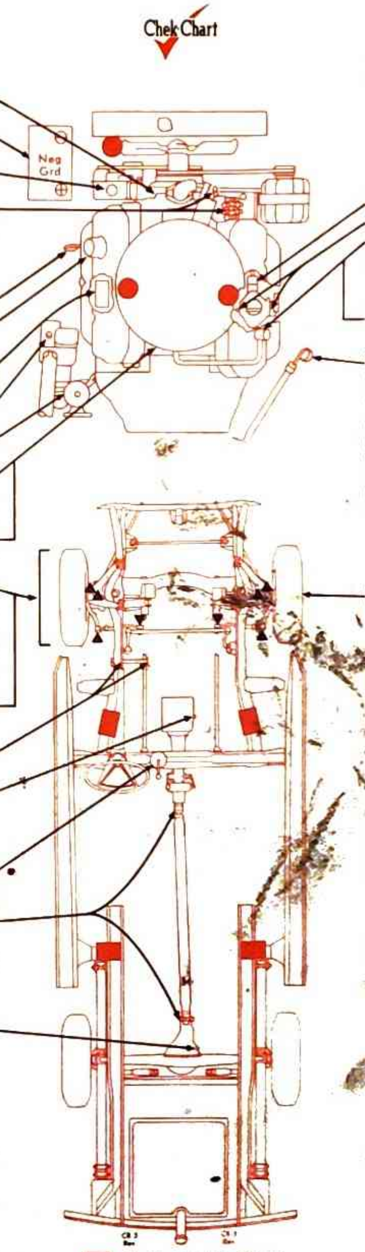
Town & Country	21
All other models	23

TIRES

Pressure	Front	Rear
7.60-15 300H, -J	24	24
8.00-14 300, Newport	24	22
8.50-14 Newport, Town & Country	22	24*
8.50-14 New Yorker	24	22
9.00-14 New Yorker, Town & Country	22	24*

* With heavy load, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above –10°	10W	10W-30, 5W-20
Below –10°		5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter .... Replace 16

Manifold Heat Control Valve Shaft .... MH ★

PCV System Valve CC
Remove and clean valve; also hose and carburetor, if passages are clogged
1962 8 1963 TY
Service more frequently under severe service

Crankcase Breather Outlet
Element 1962 .... Wash and oil 30 MO 8

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below –10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... WB
Inspect 16
1963, clean and repack C
1962, clean and repack 32
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, then need for service is indicated
Two adjustment cams are provided on each support plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in the reverse direction
1962: Adjust the brakes as follows:
1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

1963: Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

- ★ **1963, Twice yearly**
  1962, Every 4,000 miles
- 5 **Every 5,000 miles**
- 8 **Every 8,000 miles**
- 12 **Every 12,000 miles**
- 16 **Every 16,000 miles**
- 32 **Every 32,000 miles**
- OC **Every crankcase oil change**
- TY **Twice yearly**
- C **Conditional service**
  1963, drain and refill differential for below –10° requirements
  1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

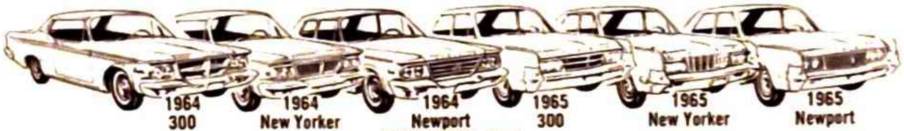
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Spec. MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

CHRYSLER

1964-65 All Models



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1964: Newport, 300	24H 27H	59 70
New Yorker, 300K	27H	70
1965: All	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
Newport, 300K with M.T.	125	155*
New Yorker, 300, 300K with A.T., 300L	130	165**

Max. var. between cylinders: *20 psi; ** 25 psi

SPARK PLUGS

1964: Champion, 300K with 390 hp. eng. XJ-10Y; 300K with 360 hp. eng. J-10Y; others J-12Y
1965: 413 eng. with Power Pack, Champion J-10Y or Mopar P-3-3P; Others, Champion J-14Y or Mopar P-3-6P
Gap: .035"   Torque: 30 ft. lb.

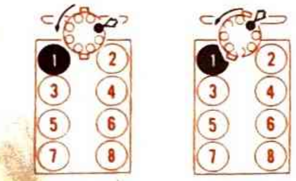
IGNITION POINTS

Chrysler, Prestolite
Gap: .014"-.019"
Dwell angle: 1964: Single points 28°-33°; each set of dual points 27°-32°, total dwell 34°-40°
1965: Single points 28°-32°; each set of dual points 27°-31°, total dwell 36°-40°

CONDENSER

Chrysler, Prestolite
Capacity: .25-.285 mfd

Cylinder Numbering Sequence



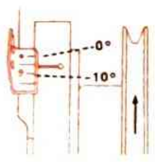
Prestolite dist.   Chrysler dist.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to adapter inserted in No. 1 distributor cap tower
   Note: Do not puncture spark plug cables
4. Disconnect vacuum line at distributor
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pulley align
7. Retighten clamp screw, recheck timing
8. Reconnect vac. line and reset to proper idle

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
300K with 390 hp engine, 12½°; others, 10°

FUEL PUMP

Carter model M-3672S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2-bbl. BBD	¾	2 rich	2 rich
CARTER			
4-bbl. AFB	1-2	2 rich*	2 rich*
STROMBERG			
2-bbl. WWC3	1½	1 rich	1 rich

* 1964, 300 Hi-Perf., index; 1965, 300 Hi-Perf., 383, 413 (3859S, 3860S) engines, index

ENGINE IDLE SPEED

Manual Trans. 500 rpm* with headlights on high beam
Auto. Trans. 500 rpm* in NEUTRAL with headlights on high beam
Air Cond. 500 rpm* in DRIVE with unit turned ON with headlights on high beam
* 300 Hi-Perf., 383, 413 (3859S, 3860S), 550 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

OC **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Oil Fill Cap** .... Wash and oil 30 MO
Service more frequently under dusty conditions

Crankcase Dipstick .... Check level

★ **Carburetor Choke Shaft** .... Clean CC

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system and for high performance engines, clean element at each crankcase oil change; replace yearly

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (8 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual

3-speed .... AF
4-speed .... 140 MP
Use 90 or 80 for cold weather operation
★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 3-speed, 4 pints; 4-speed, 6½ pints
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 4 pints
DRAIN and REFILL
C Normal service   32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

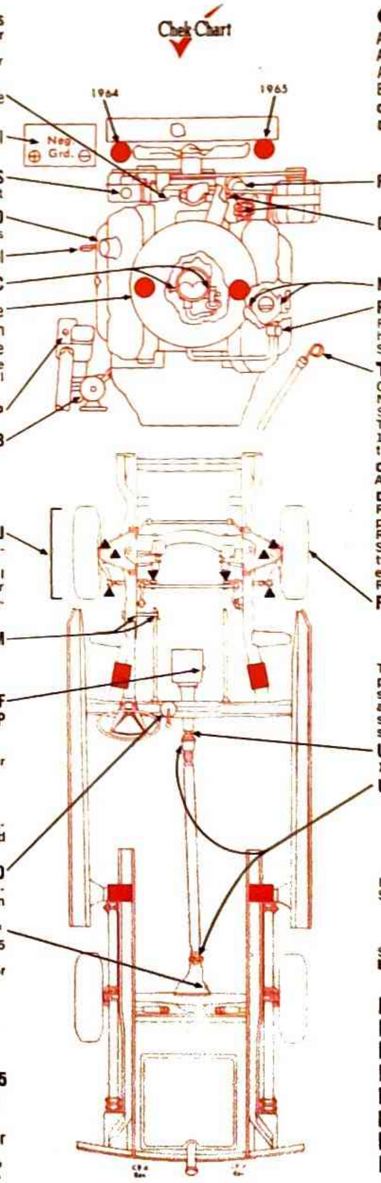
Gallons	1964	1965
Town & Country	21	22
All other models	23	25

TIRES

Pressure	Front	Rear
8.00-14 Newport	24	22
8.50-14 Newport	24*	24*
8.50-14, 9.00-14 Town & Country	24	26†
8.00-14, 8.50-14 300, 300K	24	22
8.50-14 New Yorker	24	22
9.00-14 New Yorker	24*	24*
8.25-14, 8.55-14, 8.85-14	24	22
Town & Country	22	26†

* With air conditioning, 22
† Town & Country, fully loaded, add 4 pounds

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 1964, 5 quarts; 1965, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter .... Replace
1964 16   1965 20

Distributor Shaft (oil cup) .... MO ★
300 (grease cup, 1 turn) .... CL ★
Wick under rotor .... Sparingly MO ★

Manifold Heat Control Valve Shaft .... MH ★

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joint Spline .... Coat evenly BJ C
1965 models with automatic transmission only

Universal Joints
Constant Velocity Joint and Centering Yoke, 1965 New Yorker, front only .... LM
All others .... UJ
Front: Ball and trunnion type, 2 ounces grade 2; cross type, grade 0. Rear: Grade 0
Inspect for leaks, replace seals as required .... ★
Severe service, every 2 months or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT

Self-adjusting brakes
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- ★ Twice yearly
- 5 Every 5,000 miles
- 16 Every 16,000 miles or yearly
- 20 Every 20,000 miles or 2 years
- 32 Every 32,000 miles
- OC Every other crankcase oil change
- 2Y Every 2 years or 32,000 miles
- C Conditional service
  - Lubricate gearshift lever as required
  - Drain and refill differential for below −10° requirements
  - Repack front wheel bearings as required or at brake overhaul
  - Coat universal joint spline when repacking joints

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE 6

1960-61 All Models Except Lancer

1960 Dodge Dart

1961 Dodge Dart

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
1960	24H	50
	27H	70
1961	24H	50
	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	130	160*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-12Y
Gap: .035"
Torque: 1960, 30 ft. lb.; 1961, 30-32 ft. lb.

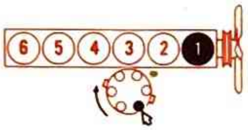
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 1960, 36°-42°; 1961, 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

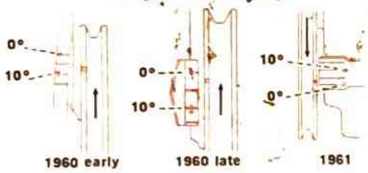


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 1960, 3½-5 lb.; 1961, 4-5 lb.; at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

BALL & BALL	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BBS	1	index*	index*

* Choke should not be field calibrated. Replace unit if defective

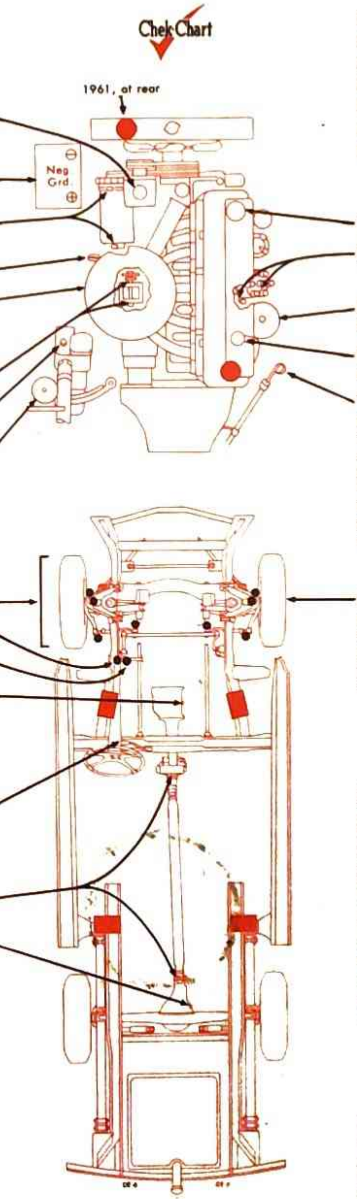
ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 500 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS



COOLING SYSTEM

COOLING SYSTEM ... Quarts	With Heater	Without Heater
All models	14	13

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** ... PS
Fill to level mark on gage. Without gage, to base of filler neck when cold, halfway when hot

★ **Battery** ... Test and fill
Caution: Do not ground positive terminal

★ **Generator** (2 oil cups) ... MO
Alternator, right side, no lubrication

Crankcase Dipstick ... Check level

Air Cleaner Element ... Service
5 Dry type ... Clean
15 Dry type ... Replace

★ **Manifold Heat Control Valve Shaft** ... MH

★ **Manual Steering Gear** (plug) ... MP
Above −10°, 90; below −10°, 80; below −30°, 75

★ **Brake Master Cylinder** (cover) ... HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** ... (8 fittings) CL

★ **Gearshift Rod Shift Levers** ... CL

★ **Torque Shaft** ... CL

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints; refill approx., 4 pints
20 DRAIN and REFILL

10 **Gearshift Lever** ... WG
Remove rubber boot below steering wheel, pivot-pin assembly, then lever. Coat sparingly ball end of lever, pivot-pin hole and surrounding area. Reassemble

20 **Universal Joints** ... Repack UJ
Use only 2 ounces in front joint

DIFFERENTIAL ... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to ½ inch below fill plug hole
CAPACITY 3½ pints
20 DRAIN and REFILL
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

GAS TANK	Gallons
Suburban	21
All other models	20

TIRES

TIRES ... Pressure	Front	Rear
7.00-14	22	22
7.50-14	22	22
8.00-14	22	22*
8.50-14	22	24◆

* Station wagon, 24; with heavy load, 28
◆ With heavy load, 28

6 Rotate tires, Method A, then balance wheels

CRANKCASE

CRANKCASE		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap ... Wash and oil 30 MO ★

Distributor Shaft (oil cup) ... MO ★
Wick under rotor ... Sparingly MO 10

Oil Filter ... Replace 4
Add extra quart oil

PCV System Valve ... CC 10
Disassemble and clean

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position ... ★
To overcome difficult starting below −10°, replace ¾ quart fluid with kerosine

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL ... Y
Remove 1 converter plug and transmission plug
Drain more frequently under severe service

Front Wheel Bearings ... Check WB 10
Clean and repack if necessary
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in opposite direction
Adjust the brakes as follows:

1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
5 Every 5,000 miles
6 Every 6,000 miles
10 Every 10,000 miles
15 Every 15,000 miles
20 Every 20,000 miles
Y Yearly or every 10,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE 6

1962 All Models Except Lancer
1963 All Models Except Dart

1962

1963

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H	48, 59

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: 1962, N-12Y; 1963, N-14Y*
Gap: .035"
Torque: 30-32 ft. lb.
* 1963, gasket not required

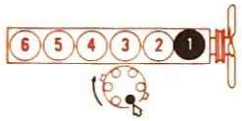
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

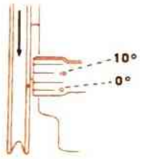


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 550 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich* **	2 rich* **
HOLLEY			
1-bbl. R	1	index*†	index*†
STROMBERG			
1-bbl. WA	¾-1	—	2 rich*

* Choke should not be field calibrated. Replace unit if defective
** 1963, 4 rich
† 1963, 2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13	12

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

16 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace
Service more frequently under severe service

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Manifold Heat Control Valve Shaft** .... MH
Service more frequently under severe service

★ **Manual Steering Gear** (plug) .... SG, LM

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

32 **Automatic Trans. Filter** (under car) ..... Replace
Replace at time of transmission drain

Front Suspension .... (4 plugs) BJ
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when lubricating, remove plug, use special gun or adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... LM
Disassemble, clean and repack at both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL
1963 Not recommended for normal service
32 1962; 1963 Severe service

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963 Normal service
32 1962; 1963 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

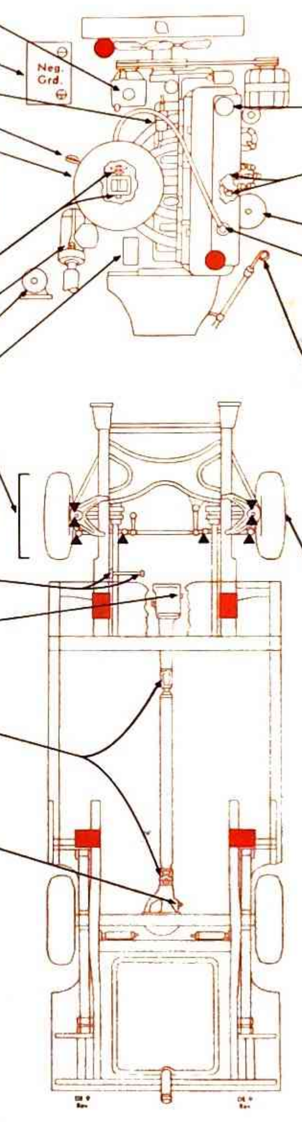
Station wagon	21½
All other models	20

TIRES

Pressure	Front	Rear
6.50-14	24	24
6.70-15	24	24*
7.00-14, 1962	24	24**
7.00-14, 1963	24	22◆
7.50-14	24	22◆

* Station wagon with heavy load, 28
** Station wagon, 26
◆ Station wagon, 26; with heavy load, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO
1962 8 1963 OC
Service more frequently under severe service

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO
1962 12 1963 TY
Service more frequently under severe service

Oil Filter .... Replace ★
Add extra quart oil

PCV System Valve CC
Remove and clean valve; also hose and carburetor, if passages are clogged
1962 8 1963 TY
Service more frequently under severe service

Crankcase Breather Outlet
Element 1962 .... Wash and oil 30 MO 8

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position ... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	7

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... WB
Inspect 16
1963, clean and repack C
1962, clean and repack 32
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1963, Twice yearly
1962, Every 4,000 miles
5 Every 5,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
16 Every 16,000 miles
32 Every 32,000 miles
OC Every crankcase oil change
TY Twice yearly
C Conditional service
1963, drain and refill differential for below −10° requirements
1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
BJ Suspension Lubricant
MoPar Part No. 2525035
CC Carburetor Cleaner
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM Lithium Grease
MH Manifold Heat Control Valve Solvent
MoPar Part No. 1879318
MO Motor Oil
MP* Multi-Purpose Gear Lubricant
Meeting Specification MIL-L-2105B
PS Power Steering Fluid
MoPar Part No. 2084329
SG Steering Gear Lubricant
UJ Universal Joint Grease
WB Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE 6

1964-65 All Models Except Dart

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24H	48, 70

COMPRESSION PRESSURE (psi at cranking speed, throttle open)	min.	max.
All	110	140*

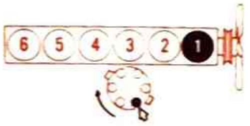
* Maximum variation between cylinders, 20 psi

SPARK PLUGS
Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30-32 ft. lb.

IGNITION POINTS
Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER
Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

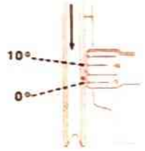


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 550 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP
Carter model MS-3674S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute or less at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich*	2 rich*
HOLLEY			
1-bbl. R. 1920	1	2 rich*	2 rich*

* Choke should not be field calibrated. Replace unit if defective

ENGINE IDLE SPEED
Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES
(engine hot and running)
Intake .010", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13	12

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

Fuel Filter .... Replace
16 1964 **20** 1965

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 MO

★ **Carburetor Choke Shaft** .... Clean CC
In carburetor air horn. Remove air cleaner to service

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 5 pints
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
★ Inspect for leaks, replace seals if necessary
Severe service, inspect every 2 months or 4,000 miles
32 Repack if used under severe service

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 4 pints
DRAIN and REFILL
C Normal service **32** Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

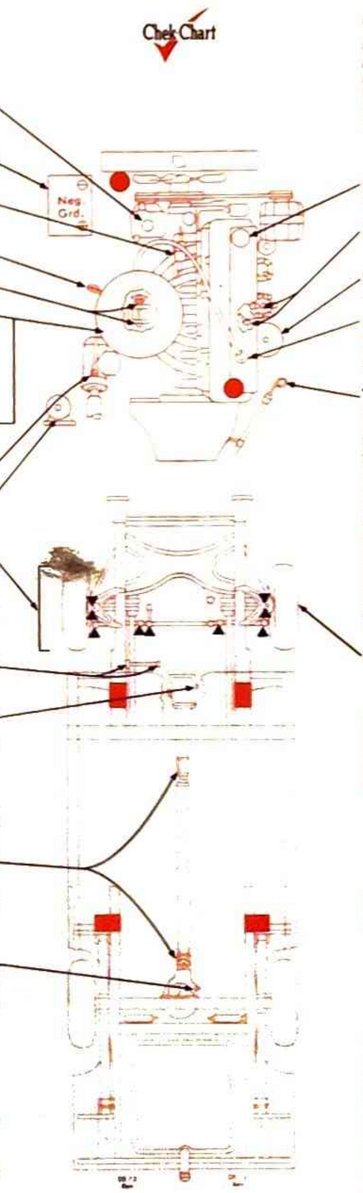
Station wagon	21
All other models	19

TIRES .... Pressure

Size	Front	Rear
6.70-15	24	24*
7.00-14, 7.50-14	24	22†*
7.35-14	22	22
7.75-14, 8.25-14	24‡	22‡

* Add 4 pounds for fully loaded station wagon
† Station wagon, 26
‡ Station wagons, front 22, rear 26; fully loaded, rear, add 6 pounds

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO ★
Service more frequently under dusty conditions

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO ★

Oil Filter .... Replace **OC**
Add extra quart oil

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	8

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect **20**
Severe service, inspect every 10,000 miles
Repack .... **C**
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Twice yearly
5 Every 5,000 miles
16 Every 16,000 miles or yearly
20 Every 20,000 miles or 2 years
32 Every 32,000 miles
OC Every other crankcase oil change
Y Yearly
2Y Every 2 years or 32,000 miles
C Conditional service
Drain and refill differential for below −10° requirements
Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE V-8

1960-61 All Models

1960
Dodge Dart
1960 Dodge
1961
Dodge Dart
1961
Dodge

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
1960 Dart	24H	50
1960 early with D-500 eng.	24H	60
1960 late -61 with D-500 eng.	24H	59
	27H	70
1961	24H	50
	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
318 engine	135	165*
1961 361 engine	135	165*
Others	150	180**

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion: With (2) 4-bbl. carbs., J-9Y; others, J-12Y
Gap: .035"
Torque: 1960, 30 ft. lb.; 1961, 30-32 ft. lb.

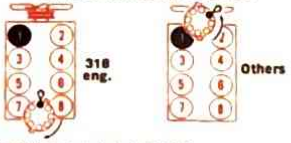
IGNITION POINTS

Autolite: All 1960, 1961 ex. 318 eng., Chrysler
Gap: .014"-.019"
Dwell angle: Single points, 27°-32°; dual points, total dwell, 34°-40°

CONDENSER

Autolite: All 1960, 1961 ex. 318 eng., Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

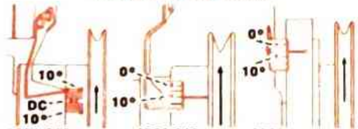


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



1960 318 eng. 1961 318 eng. 1960-61 Others

Timing Setting (Before Top Dead Center): 318 engine with Manual Trans. 5°; 1960 383 engine with (2) 4-bbl. carburetors and all 1961 383 engine, 7½°; others, 10°

FUEL PUMP

Carter model: 318 engine, M-2608S; with Air Cond., M-2611S; 361, 383 engines, M-2769S
Pressure: M-2769S, 3½ lb.; others, 5-7 lb.; at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2-bbl. BBD	1	index	index
CARTER			
4-bbl. AFB-2903S	1½	1 rich	1 rich
4-bbl. AFB-2968S, -3133S, -3152S	1½	2 rich	2 rich
Other AFB	1½	index	index
HOLLEY			
4-bbl. R models	1	1 rich	1 rich
STROMBERG			
2-bbl. WWC3-188,-188A	½-⅝	1 rich	1 rich
2 bbl. WW15	1¼	index	index

ENGINE IDLE SPEED

Manual Trans. 500* rpm, headlights on high beam
Auto. Trans. 500* rpm, in NEUTRAL with headlights on high beam
Air Cond. 550*▲ rpm, in NEUTRAL with unit turned ON and headlights on high beam
* With (2) 4-bbl. carburetors, 750 rpm
▲ With Holley carb., 500 rpm, unit turned ON

VALVE CLEARANCES

(engine hot and running)

318 engine, 1960: Intake .010"; exhaust .018"
1961: Intake .013"; exhaust .021"
361, 383 engines: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Dodge, Dart with D500 engine	17	16
All other models	21	20

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

4 **Oil Filter** (under car) .... Replace
Add extra quart oil
318-cu. in. engine, right side, at rear

★ **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to level mark on gage. Without gage, to base of filler neck when cold, halfway when hot

Crankcase Dipstick .... Check level
318-cu. in. engine, right side, at front

★ **Oil Fill Cap** .... Wash and oil 30 MO

Air Cleaner Element .... Service
5 Dry type .... Clean
15 Dry type .... Replace

★ **Manual Steering Gear** (plug) .... MP
Above -10°, 90; below -10°, 80; below -30°, 75

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

★ **Gearshift Rod Shift Levers** CL
★ **Torque Shaft** CL

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY Polara 1961, 4¼ pints, refill approx. 3½ pints, 1960 3½ pints; Matador, Seneca, Pioneer, Phoenix 5 pints, refill approx. 4 pints, except early 1960 models, 2¾ pints
20 DRAIN and REFILL

10 **Gearshift Lever** .... WG
Remove rubber boot below steering wheel, pivot-pin assembly, then lever. Coat sparingly ball end of lever, pivot-pin hole and surrounding area. Reassemble

20 **Universal Joints** .... Repack UJ
Use only 2 ounces in front joint

DIFFERENTIAL .... MP*

Above -10°, 90; below -10°, 80; below -30°, 75
★ Maintain level to ½ inch below fill plug hole
CAPACITY 4 pints
20 DRAIN and REFILL
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

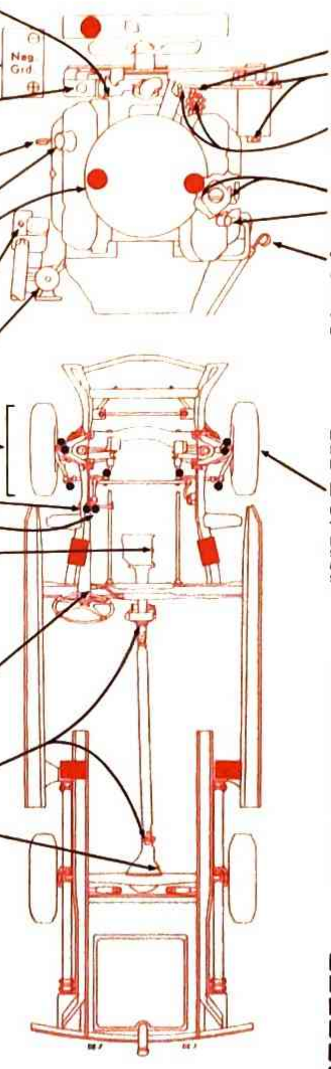
	Gallons
Sierra, Suburban	21
All other models	20

TIRES .... Pressure

	Front	Rear
7.50-14	24	22
8.00-14	24	22*
8.50-14	24	22*

* Station wagon, 24; rear, with heavy load, 28
For Captive-Air tires inner chamber pressure must be 4 to 6 pounds higher than outer chamber pressure shown

6 **Rotate tires, Method A, then balance wheels**
Captive-Air tires, Method C



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above -10°	10W	10W-30, 5W-20
Below -10°		5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element .... Replace 23

Generator (2 oil cups) .... MO ★
Seneca, Pioneer, Phoenix with air conditioning, left side. Alternator, no lubrication

Distributor Shaft (oil cup) .... MO ★
With 318-cu. in. engine, center rear
Wick under rotor .... Sparingly MO 10

Manifold Heat Control Valve Shaft .... MH ★

PCV System Valve .... CC 10
Disassemble and clean

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
PowerFlite: To overcome difficult starting below -10°, replace 1 quart fluid with kerosine

CAPACITY, quarts	Initial Refill	Total Refill
PowerFlite: Seneca, Pioneer, Phoenix	5	10
Matador	5	11½
TorqueFlite: Seneca, Pioneer, Phoenix	5	9½
Matador, Polara	5	11

DRAIN and REFILL .... Y
Remove 1 converter plug and disconnect fill pipe
Drain more frequently under severe service

Front Wheel Bearings .... Check WB 10
Clean and repack if necessary
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in opposite direction
Adjust the brakes as follows:

1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

- ★ Every 2,000 miles
- 4 Every 4,000 miles
- 5 Every 5,000 miles
- 6 Every 6,000 miles
- 10 Every 10,000 miles
- 15 Every 15,000 miles
- 20 Every 20,000 miles
- 23 Every 23,000 miles
- Y Yearly or every 10,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

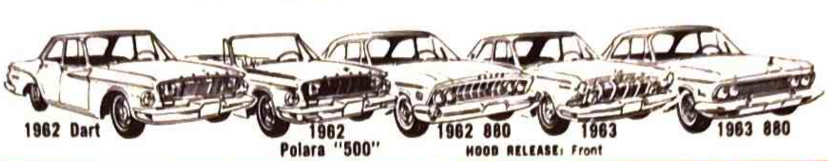
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE V-8

1962-63 All Models



TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include racing-type engines)

BATTERY

	AABM Group No.	Amp. Hrs.
318 engine	24H	48
361, 383 engines	24H	59

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
318 eng.	120	150*
361 eng.	125	155*
383 eng. Automatic Trans.	130	165**
383 eng. Manual Trans.	150	180**

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion: 383 eng. with 4-bbl. carb., J-9Y; others, J-12Y

Gap: .035" Torque: 30-32 ft. lb.

IGNITION POINTS

Autolite, Chrysler, Prestolite

Gap: Autolite, Chrysler, .014"-.019"; Prestolite, .015"-.018"

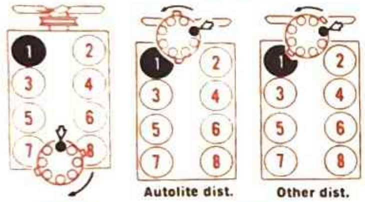
Dwell angle: Single points, Autolite, Chrysler, 28°-33°; Prestolite, 26°-32°; Dual points, each set, 27°-32°, total dwell, 34°-40°

CONDENSER

Autolite, Chrysler, Prestolite

Capacity: .25-.285 mfd

Cylinder Numbering Sequence



Autolite dist. Other dist.

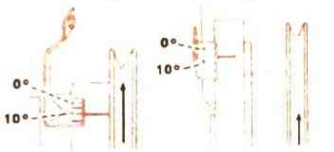
318 eng. 361, 383 engs.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



318 eng. 361, 383 engs.

Timing Setting (Before Top Dead Center): 1963, 361, 383 engs. 10°; others, Manual Trans. 5°, Auto. Trans. 10°

FUEL PUMP

Carter model: 318 eng., M-2608S; with Air Cond., M-2611S; 361, 383 engs., M-2769S

Pressure: M-2769S, 3½-5 lb.; others, 5-7 lb.; at idle rpm

Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2-bbl. BBD	1	index*	index*
CARTER			
4-bbl. AFB	1½	2 rich*	2 rich* **
STROMBERG			
2-bbl. WWC3	1¼	index*	index*

* Choke should not be field calibrated. Replace unit if defective
** 1963, index

ENGINE IDLE SPEED

Manual Trans. 500 rpm, headlights on high beam

Auto. Trans. 500 rpm in NEUTRAL with headlights on high beam

Air Cond. 500 rpm, in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)

318 eng.: Intake .013", exhaust .021"

361, 383 engs.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
361-, 383-cu. in. engines	17	16
318-cu. in. engine	21	20

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

Oil Fill Cap .... Wash and oil 30 **MO**
OC 1963 8 1962

32 **Automatic Trans. Filter** (under car) .... Replace
Replace at time of transmission drain

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace
Service more frequently under severe service

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Manual Steering Gear** (plug) .... **SG, LM**
880 .... **MP**
Above −30°, 80; below −30°, 75

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **Distributor Shaft** (oil cup) .... **MO**
383- and 361-cu. in. engines, right side at front
Wick under rotor .... Sparingly **MO**
TY 1963 12 1962
Service more frequently under severe service

Front Suspension .... (4 plugs) **BJ**
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when relubricating, remove plug, use special gun or proper adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... **(4 sealed bearings)**
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... **LM**
Disassemble, clean and repack both ends

TRANSMISSION, Manual

★ Maintain level to fill plug hole
3-speed .... **AF**
CAPACITY 5 pints; except 880, 4½ pints, refill approx. 3½ pints
4-speed .... **MP, AF**
Above +32°, 80MP, below +32°, AF
90MP may be used if 80 is not available
CAPACITY 3 pints
DRAIN and REFILL
1963 Not recommended for normal service
32 1962; 1963 Severe service

32 **Gearshift Lever** 880 (3-speed, 4-speed) .... **MO**
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

Universal Joints .... **UJ**
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL

.... **MP***

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963 Normal service
32 1962; 1963 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

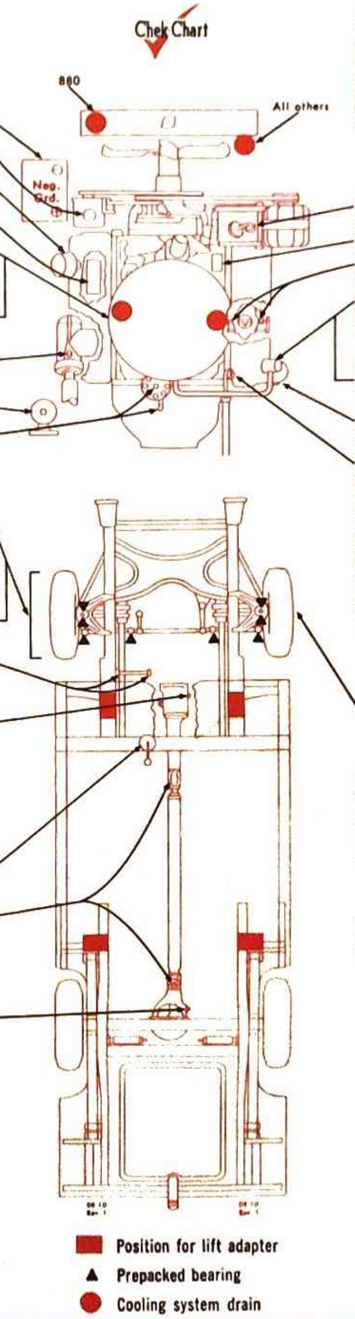
Gallons	880	All others
Station wagon	21	21½
All other models	23	20

TIRES

Pressure	Front	Rear
7.00-14, 7.50-14, 8.00-14	24	22*
6.70-15	24	24**
8.50-14 880 station wagon	22	24**

* Station wagon, 26; with heavy load, 28
** Station wagon with heavy load, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962



CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 880, 5 quarts; all others, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level
383- and 361-cu. in. engines, left side

Fuel Filter .... Replace 16

Manifold Heat Control Valve Shaft .... **MH** ★
Service more frequently under severe service

PCV System Valve .... **CC**
Remove and clean valve; also hose and carburetor, if passages are clogged
1962 8 1963 TY
Service more frequently under severe service

Crankcase Breather Outlet
Element 1962 .... Wash and oil 30 **MO** 8

Oil Filter (under car) .... Replace ★
Add extra qt. oil. 383-, 361-cu. in. eng., left side, front

TRANSMISSION, Automatic

.... **AF**

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... **WB**
Inspect 16
1962, clean and repack 32
1963, clean and repack C

Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1963, Twice yearly
1962, Every 4,000 miles
5 Every 5,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
16 Every 16,000 miles
32 Every 32,000 miles
OC Every crankcase oil change
TY Twice yearly
C Conditional service
1963, drain and refill differential for below −10° requirements
1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

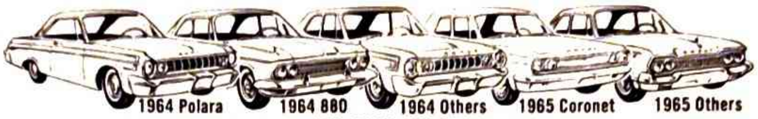
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE V-8

1964-65 All Models Except Dart



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include racing-type engs.)

BATTERY

	AABM Group No.	Amp. Hrs.
273, 318 engines	24H	48
361 engine	24H 27H	59 70
383, 413, 426 engines	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
273 engine; 318 engine 1964 model	120	150*
318 engine, 1965 model	125	155**
361 engine	125	155***
383 engine; except 1965 2-bbl.	130	165**
1965 2-bbl.	125	155*
413, 426 engines	130	165**

Maximum variation between cylinders:
*20 psi; **25 psi; ***1964, 20 psi, 1965, 25 psi

SPARK PLUGS

1964: Champion; 318, 361, 383 with 2-bbl. carb. J-12Y; 383 with 4-bbl. carb. 413, 426, J-10Y
1965: 273 eng. Champion N-14Y or MoPar P-6-6P
318, 361, 383 with 2-bbl. carb. Champion J-14Y or MoPar P-3-6P
383 with 4-bbl. carb., 413, 426, Champion J-10Y or MoPar P-3-3P
Gap: .035"   Torque: 30-32 ft. lb.

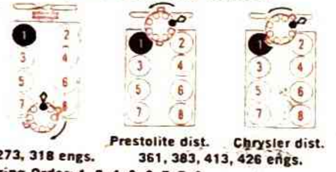
IGNITION POINTS

Chrysler, Prestolite   Gap: .014"-.019"
Dwell angle: Single points 28°-33°*
Dual points: 1964: each set 27°-32°; total dwell 34°-40°
1965: each set 27°-31°; total dwell 36°-40°
* 1965: 361 and 383 engs. with 2-bbl. carb. 28°-32°

CONDENSER

Chrysler, Prestolite   Capacity: .25-.285 mfd

Cylinder Numbering Sequence



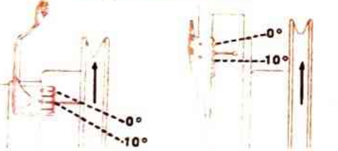
273, 318 engs.   361, 383, 413, 426 engs.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



273, 318 engs.   361, 383, 413, 426 engs.

Timing Setting (Before Top Dead Center):
273 and 318 engs. with Manual Trans. 5°; Auto. Trans. 10°; Others 10°

FUEL PUMP

Carter model: 273, 318 engs. MS-3673S; 361, 383, 413, 426 engs. MS-3672S
Pressure: MS-3673S, 5-7 lb.; MS-3672S, 3½-5 lb.; at idle rpm
Volume: 1 quart per minute or less at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2-bbl. BBD	1	index**	index**
CARTER			
4-bbl. AFB	1-2	index*†	index*†
STROMBERG			
2-bbl. WW3 1964-65	1¼	index*	index*
2-bbl. WWC3 1965	1½	1 rich*	1 rich*

* Choke setting should not be field calibrated. Replace unit if defective
** 1965: 361, 383 engines, 2 rich
† 1965: 273, 383 and 413 engine with Auto. Trans., 2 rich

ENGINE IDLE SPEED

Manual Trans.: 500 rpm, headlights on high beam
Auto. Trans.: 500 rpm, in NEUTRAL with headlights on high beam
Air Cond.: 500 rpm, in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
273, 318 engs.: Intake .013", exhaust, .021"
361, 383, 413, 426 engs.: Hydraulic lifters, non-adjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
273-cu. in. engine	18	17
318-cu. in. engine	21	20
361-, 383-, 413-, 426-cu. in. eng.	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Oil Fill Cap** .... Wash and oil 30 MO
Service more frequently under dusty conditions

★ **Carburetor Choke Shaft** .... Clean CC

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system and for high performance engine, clean element at each crankcase oil change; replace yearly
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 MO

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Distributor Shaft** (oil cup) .... MO
361-, 383-, 413-, 426-cu. in. engines, right side front
★ Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (8 or 9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual

3-speed .... AF
3-speed H.D. .... MP, AF
Above +32°, 80MP; below +32°, AF
4-speed .... 140 MP
Use 90 or 80 for cold weather operation
★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 3-speed: 880 **4 pints**, H.D. **2½ pints**, others **3½ pints**; 4-speed **6½ pints**
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

DIFFERENTIAL .... MP*

Above -10°, 90; below -10°, 80; below -30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 4 PINTS
DRAIN and REFILL
C Normal service   32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

Gallons	1964	1965
Station wagons	21	22*
880	23	25
Other models	19	25**

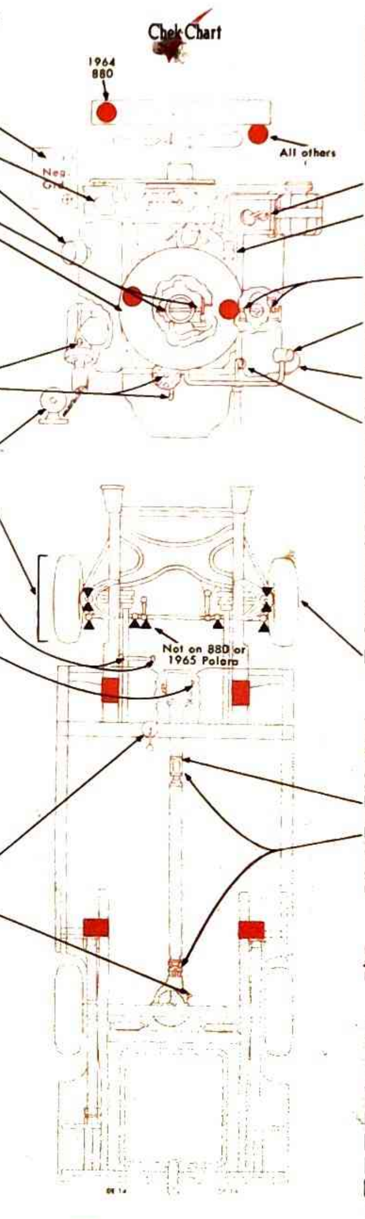
* Coronet, **21**   ** Coronet, **19**

TIRES

Pressure	Front	Rear
6.70-15	24	24
7.00-14, 7.50-14, 8.00-14	24	22*†
8.50-14 Sedan	24‡	22
8.50-14 Suburban	24	26†
7.35-14, 7.75-14, 8.25-14, 8.55-14	24●	22●

* 880 and station wagons (ex. 880), front **22**, rear **26**; 880 station wagon, front **24**, rear **26**
† Add 4 pounds for fully loaded station wagon
‡ With air conditioning, **22**
● Station wagons, front **22**, rear **26**; fully loaded, rear, add 6 pounds

5 Rotate tires, Method A, then balance wheels



▬	Position for lift adapter
▲	Prepacked bearing
●	Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above -10°	10W	10W-30, 5W-20
Below -10°		5W-20

CAPACITY 1964 880 and 426-cu. in. engine, **5** quarts; all others, **4 quarts**
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level
361-, 383-, 413-, 426-cu. in. engines, left side

Fuel Filter .... Replace
1964 16   1965 20
361-, 383-, 413-, 426-cu. in. engines, front of engine above fuel pump

Manifold Heat Control Valve Shaft .... MH ★
361-, 383-, 413-, 426-cu. in. engines, at rear of manifold

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

Oil Filter (under car) .... Replace OC
Add extra quart oil. 361-, 383-, 413-, 426-cu. in. engines, left side front

TRANSMISSION, Automatic .... AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below -10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joint Spline .... Coat BJ C
1965 models with automatic transmission only

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
Inspect for leaks, replace seals if necessary .... ★
Severe service, inspect every 2 months or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★	Twice yearly
5	Every 5,000 miles
16	Every 16,000 miles or yearly
20	Every 20,000 miles or 2 years
32	Every 32,000 miles
OC	Every other crankcase oil change
Y	Yearly
2Y	Every 2 years or 32,000 miles
C	Conditional service

Lubricate gearshift lever as required
Drain and refill differential for below -10° requirements
Repack front wheel bearings as required or at brake overhaul
Coat universal joint spline when repacking joints

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE DART 6
1963 All Models

DODGE LANCER 6
1962 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	20H	38
	24H	48

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: 1962, N-12Y; 1963, N-14Y*
Gap: .035"
Torque: 30-32 ft. lb.
* 1963, gasket not required

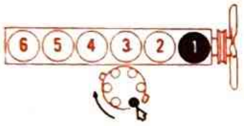
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

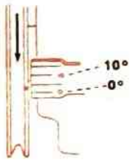


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 550 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 1-bbl. BBS	1	2 rich* **	2 rich* **
HOLLEY 1-bbl. R	1	index*†	index*†
STROMBERG 1-bbl. WA	¾-1	—	2 rich*

* Choke should not be field calibrated. Replace unit if defective
** 1963, 4 rich
† 1963, 2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Super 225-cu. in. engine	13	12
All other models	12	11

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

16 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH
Service more frequently under severe service

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace
Service more frequently under severe service

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Manual Steering Gear** (plug) .... SG, LM

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

32 **Automatic Transmission Filter** .... Replace
Replace at time of transmission drain

Front Suspension .... (4 plugs) BJ
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when lubricating, remove plug, use special gun or adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL
1963 Not recommended for normal service
32 1962; 1963 Severe service

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL
C 1963 Normal service
32 1962; 1963 Severe service

GAS TANK .... Gallons

1963	18
1962	14

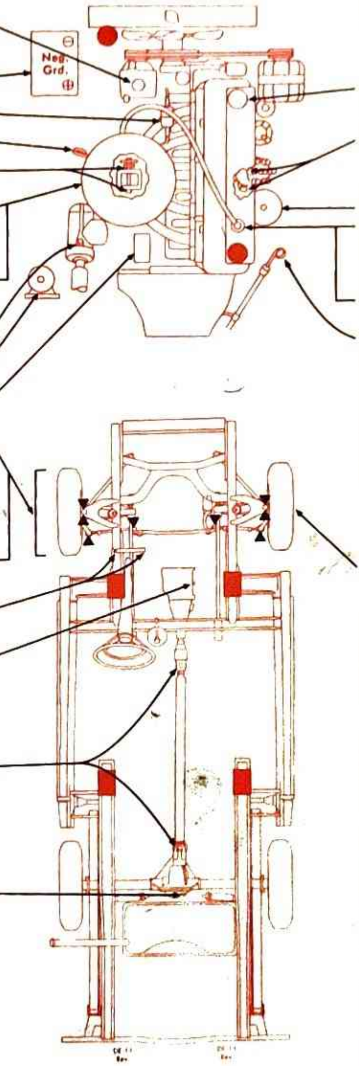
TIRES

	Pressure Front	Rear
6.50-13	24	24*

* Station wagon, fully loaded, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962

Chek-Chart



■ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO
1962 8 1963 OC
Service more frequently under severe service

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO
1962 12 1963 TY
Service more frequently under severe service

Oil Filter .... Replace, add extra quart oil ★

PCV System Valve CC
Remove and clean valve; also hose and carburetor, if passages are clogged
1962 8 1963 TY
Service more frequently under severe service

Crankcase Breather Outlet
Element 1962 .... Wash and oil 30 MO 8

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... WB
Inspect 16
Clean and repack ..... 1962 32 1963 C
Tighten front wheel adjusting nut to 70 in. lb. position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
1962, early 1963: Adjust the brakes as follows:
1. Using a suitable tool inserted into rear adjustment hole in backing plate, expand shoes until light drag is felt when rotating wheel
2. Back off adjustment 10-12 notches or until all drag is eliminated
3. Repeat steps 1 and 2 for each brake

Late 1963: Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **1963, Twice yearly**
1962, Every 4,000 miles
5 **Every 5,000 miles**
8 **Every 8,000 miles**
12 **Every 12,000 miles**
16 **Every 16,000 miles**
32 **Every 32,000 miles**
OC **Every crankcase oil change**
TY **Twice yearly**
C **Conditional service**
1963, drain and refill differential for below −10° requirements
1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

DODGE DART 6

1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
170 engine	20H	38, 48
225 engine	24H	48
	24H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30-32 ft. lb.

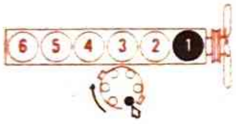
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

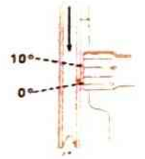


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 550 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model MS-3674S
Pressure: 3½-5 lb. at idle rpm
Volume: 1 quart per minute or less at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich*	2 rich*
HOLLEY			
1-bbl. R 1920	1	2 rich*	2 rich*

* Choke should not be field calibrated. Replace unit if defective

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Super 225-cu. in. engine	13	12
All other models	12	11

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

Fuel Filter .... Replace
16 1964 20 1965

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH

Air Cleaner Element .... Service
- ★ Dry type .... Clean
- 2Y Dry type .... Replace
- ★ Oil bath .... Check
- Y Oil bath .... Wash and fill 10W-30 MO

★ **Carburetor Choke Shaft** .... Clean CC
In carburetor air horn. Remove air cleaner to service

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles

CAPACITY 3-speed, **5 pints**; 4-speed, **6 pints**
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

DIFFERENTIAL .... MP•

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole (axle hoist); bottom of fill plug hole (frame hoist)
Severe service, check level every 2 months or 4,000 miles
CAPACITY 2 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

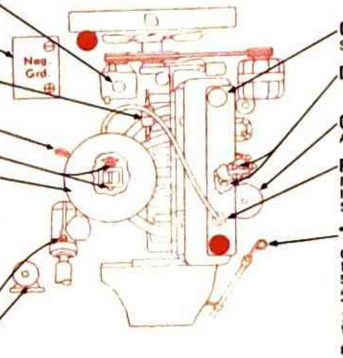
All models 18

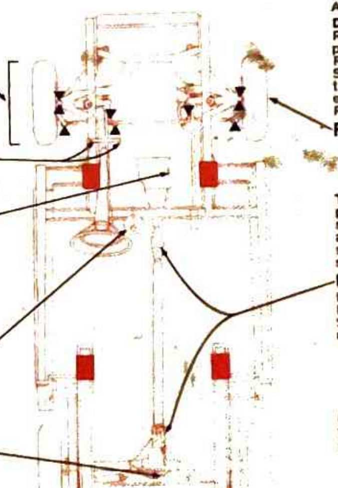
TIRES

Pressure	Front	Rear
6.50-13	24	24*
7.00-13	24	22†

* Station wagon, fully loaded, **28**
† Station wagon, **24**; fully loaded, **30**

5 Rotate tires, Method A, then balance wheels





■ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO ★
Service more frequently under dusty conditions

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO ★

Oil Filter .... Replace OC
Add extra quart oil

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
Inspect for leaks, replace seals if necessary .... ★
Severe service, inspect every 2 months or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- ★ Twice yearly
- 5 Every 5,000 miles
- 16 Every 16,000 miles or yearly
- 20 Every 20,000 miles or 2 years
- 32 Every 32,000 miles
- OC Every other crankcase oil change
- Y Yearly
- 2Y Every 2 years or 32,000 miles
- C Conditional service
  - Lubricate gearshift lever as required
  - Drain and refill differential for below −10° requirements
  - Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP•	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

• For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE DART V-8
1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24H	48, 70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
2-bbl. carburetor	120	150*
4-bbl. carburetor	130	165**

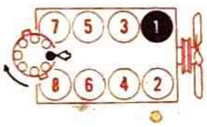
* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS
Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30-32 ft. lb.

IGNITION POINTS
Chrysler
Gap: .014"-.019"
Dwell angle: 28°-33°; dual points, each set 27°-31°, total dwell 36°-40°

CONDENSER
Chrysler
Capacity: .25-.285 mfd

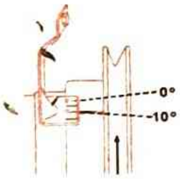
Cylinder Numbering Sequence



Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
2-bbl. carb.: Manual Trans. 5°; Auto. Trans. 10°
4-bbl. carb. 10°

FUEL PUMP
Carter model MS-3673S
Pressure: 5-7 lb. at idle rpm
Volume: 1 quart per minute or less at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 2-bbl. BBD	1	index	index
CARTER 4-bbl. AFB	1-2	index	index
STROMBERG 2-bbl. WW3	1¼	index	index

ENGINE IDLE SPEED
Manual Trans. 2-bbl. 500 rpm; 4-bbl. 600 rpm; headlights on high beam
Auto. Trans. 2-bbl. 500 rpm; 4-bbl. 600 rpm; in NEUTRAL; headlights on high beam
Air Cond. 2-bbl. 500 rpm; 4-bbl. 600 rpm; in NEUTRAL; unit turned ON and headlights on high beam

VALVE CLEARANCES
(engine hot and running)
Intake .013"; exhaust .021"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1964	17	16
1965	18	17

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Carburetor Choke Shaft** .... Clean CC

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system and for high performance engines, clean element at each crankcase oil change; replace yearly
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 MO

★ **Oil Fill Cap** .... Wash and oil 30 MO
Service more frequently under dusty conditions

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Distributor Shaft** (oil cup) .... MO
★ Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual
3-speed .... AF
4-speed .... 140 MP
Use 90 or 80 for cold weather operation
★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 3-speed, 1964 **5 pints**, 1965 **4 pints**; 4-speed, **6 pints**
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

DIFFERENTIAL .... MP*
Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ⅝ inch below fill plug hole (axle hoist); bottom of fill plug hole (frame hoist)
Severe service, check level every 2 months or 4,000 miles
CAPACITY 2 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION
Metal tag attached to housing near fill plug

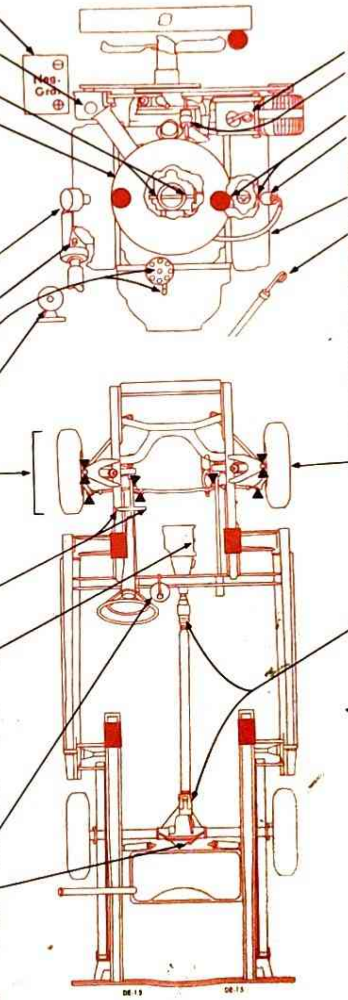
GAS TANK .... Gallons
All models 18

TIRES

	Pressure	Front	Rear
7.00-13		24	22*

* Suburban, **24**; fully loaded, **28**

5 Rotate tires, Method A, then balance wheels



■ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

CRANKCASE		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level
Fuel Filter .... Replace
1964 16 1965 20
Manifold Heat Control Valve Shaft .... MH ★
PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service
Oil Filter (under car) .... Replace OC
Add extra quart oil

TRANSMISSION, Automatic . . AF
Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C

Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
Inspect for leaks, replace seals if necessary .... ★
Severe service, inspect every 2 months or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT
Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS
- ★ Twice yearly
- 5 Every 5,000 miles
- 16 Every 16,000 miles or yearly*
- 20 Every 20,000 miles or 2 years
- 32 Every 32,000 miles
- OC Every other crankcase oil change
- Y Yearly
- 2Y Every 2 years or 32,000 miles
- C Conditional service
  - Lubricate gearshift lever as required
  - Drain and refill differential for below −10° requirements
  - Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A	HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
BJ	Suspension Lubricant MoPar Part No. 2525035	LM	Lithium Grease, EP No. 2
CC	Carburetor Cleaner	MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
		MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B	PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease	WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

FORD 6

1961 All Except Falcon
1962-64 Galaxie, 300, Custom

1961
1962
1963
1964

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All ex. Auto. Trans. & A/C	29NF	55
All with Auto. Trans. & A/C	29NF	65
	27F	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 130-170

Max. variation: 1961-63, 10 psi; 1964, 20 psi

SPARK PLUGS

Autolite: BTF6 except 1964 with economy carburetor, BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

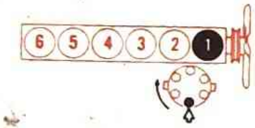
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

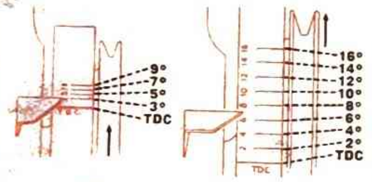


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1961 1962-64

Timing Setting (Before Top Dead Center):
1961-63:
Manual Trans. 6° (Allowable range, 2°-11°)
Auto. Trans. 12° (Allowable range, 2°-17°)
1964:
Manual Trans. 4°*
Auto. Trans. 10°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC model: 5594872; with electric windshield wipers, 5594874
Pressure: 3½-5½ lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
FORD 1-bbl.	1-1½
HOLLEY 1-bbl.	1-1½

ENGINE IDLE SPEED

Manual Trans.:	1961-63, 500-525 rpm 1964, 525-550 rpm
Auto. Trans.:	1961, 475-500 rpm in DRIVE 1962-63, 450-475 rpm in DRIVE 1964, 525-550 rpm in DRIVE

With air conditioning, same rpm as listed but with unit turned ON and in operation for 20 minutes

VALVE CLEARANCES

(engine hot and running)

Early 1961: Intake .019"; exhaust .019"
Late 1961, 1962-64 models have mechanical automatic valve adjusters. Periodic adjustment not required

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	16	15

Cooling system pressure, 12-15 pounds

★ **Oil Fill Cap** .... Wash

★ **Power Steering Reservoir** .... FA
Fill to ¼ inch below top of reservoir

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH
1961-62, remove air cleaner to lubricate

Air Cleaner Element .... Service
★ Dry type .... Clean
Dry type .... Replace
30 1961-62 24 1963 36 1964
12 Polyurethane .... Replace
1964 models with closed PCV system

C **Steering Gear** (plug) .... SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of cylinder

★ **PCV System** .... Service
Valve, except late 1964 .... Clean
12 Late 1964, jiggle-pin type ...... Replace
12 All parts .... Clean

Front Suspension and Steering Linkage ....(9, 10 or 12 plugs) LM
Relubricate using special adapter. Reinstall plug
30 1961-62 36 1963-64

TRANSMISSION, Manual ..80 EP

★ Maintain level to fill plug hole
CAPACITY 1961-62, 3 pints, with or without overdrive. 1963-64, 3½ pints; with overdrive, 3¾ pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug hole. Fill slowly thru transmission

30 **Universal Joint Spline** 1961....Coat 1 oz. SS
On models with automatic transmission

Universal Joints (plug) .... UJ
30 1961-62 36 1963-64
Relubricate using special adapter. Reinstall plug

DIFFERENTIAL ....90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 1961-62, 4½ pints; 1963-64, 5 pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Letter with axle number on patent plate on driver's door pillar

GAS TANK ....Gallons

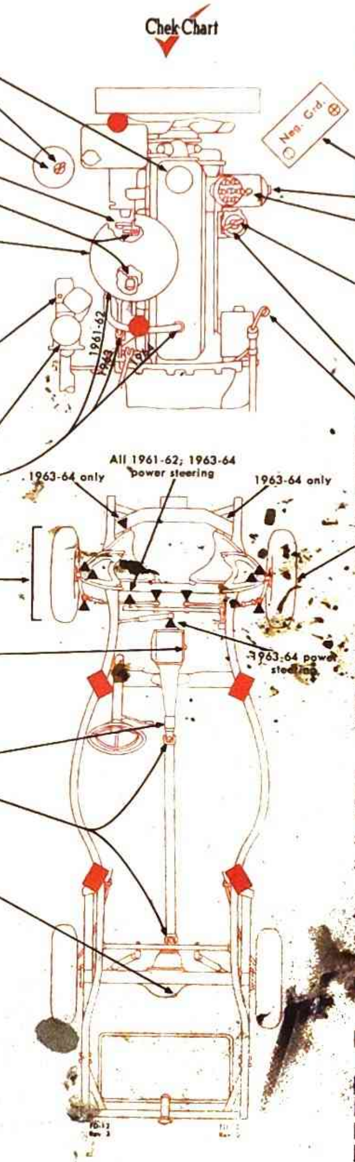
1961-63 station wagons	21
1961-63 other models	20
1964 station wagons	20½
1964 other models	19½

TIRES

Pressure	Front	Rear
7.00-14, 7.50-14, 8.00-14	24*	24*
8.00-14 station wagon	24*†	28*†

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds
† Tires with 8-ply rating medium load, front 26, rear 32; heavy load, front 28, rear 36

Rotate tires, Method A, then balance wheels
8 1961 12 1962 6 1963-64
More often under severe road conditions and heavy loads



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above —10° 10W-30
Below —10° 5W-20
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Oil Filter .... Replace, add extra quart oil ★

Distributor Shaft (oil cup)..Sparingly 10W MO
1961 12
1962-64 C

Fuel Filter .... Replace
1961, left side forward 8
1962, right side forward 30
1963-64 36

Fuel Pump Sediment Bowl & Screen 1961. Clean 8

TRANSMISSION, Automatic ..FA

Check level, fluid warm, engine idling, in PARK.. ★

CAPACITY, quarts	Initial Refill	Total Refill
1961-63	5	9
1964	4	8½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs; 1961-63, remove oil pan; 1964, disconnect fill pipe

Front Wheel Bearings .... Repack WB
Repack on mileage basis only
1961 12
1962 30
1963-64 24

1961, initial torque, 11½-12½ ft. lb., while rotating wheel; final adjustment, loosen ⅙ but not more than ⅓ turn
1962-64, initial torque, 1[illegible]20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Turn star wheel adjuster until shoes contact drum lightly
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjustment ¾ turn with finger pressure only. If adjustment screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels, and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **1961, Every 4,000 miles, or 4 months**
1962-64, Every 6,000 miles or 6 months
6 **Every 6,000 miles or 6 months**
8 **Every 8,000 miles or 8 months**
12 **Every 12,000 miles or 12 months**
24 **Every 24,000 miles or 2 years**
30 **Every 30,000 miles or 2 years**
36 **Every 36,000 miles or 3 years**
C **Conditional service**
Check steering gear periodically and add lubricant as required
Rotate tires and balance wheels as required
Lubricate distributor shaft at time of tune-up

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA Ford Automatic Transmission Fluid Specification No. M2C33-D
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP* Hypoid Gear Lubricant Specification No. ESW-M2C50-A
LM Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH Manifold Heat Control Valve Solvent Specification No. M-99C2
MO Motor Oil
SG Steering Gear Lubricant Specification No. ESW-M-1C87-A
SS Special Purpose Lubricant Specification No. M1C-39
UJ Universal Joint Grease Specification No. ESA-M-1C57-A
WB Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD 6

1965 Galaxie, Custom

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22HF	45
	24F	55
	27HF	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	150-200

Maximum variation, 20 psi

SPARK PLUGS

Autolite: BTF6 except with economy carburetor, BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

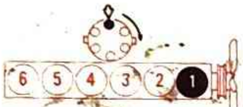
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

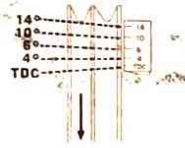


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):

Manual Trans. 6° *
Auto. Trans. 8° *

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 4-6 lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl.	1-1½	index	index

ENGINE IDLE SPEED

Manual Trans. 500-525 rpm*
Auto. Trans. 500-525 rpm* in DRIVE
With air conditioning, same rpm as listed but with unit turned ON and in operation for 20 minutes
* Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	With Heater	Without Heater
All models (Quarts)	16	15

Cooling system pressure, 12-15 pounds

★ **Oil Fill Cap** .... Wash

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

36 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level

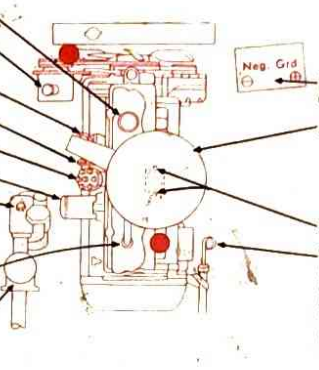
C **Distributor Shaft** (oil cup) .. Sparingly 10W **MO**

★ **Oil Filter** .... Replace, add extra quart oil

C **Steering Gear** (plug) .... **SG**
Turn wheels to left, remove fill plug and housing cover lower cap screw: Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

PCV System .... Service
12 Valve .... Replace
12 All parts .... Clean

★ **Brake Master Cylinder** (cap) .... **HB**
Fill to ⅜ inch below top of reservoir



36 **Front Suspension and Steering Linkage** .... (8 plugs) **LM**
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 3½ pints; with overdrive, 3¾ pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug hole. Fill slowly thru transmission

36 **Universal Joints** (plug) .... **UJ**
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK

	Gallons
All models	20

TIRES

Pressure	Front	Rear
7.35-15, 7.75-15, 8.15-15	24*	24*†
8.15-15 station wagon	24*	28*†

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds
† Tires with 8-ply rating, medium load, front 26, rear 30; heavy load, front 28, rear 36

C Rotate tires, Method A, then balance wheels

CRANKCASE

	"MS" MO
Above –10°	10W-30
Below –10°	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Air Cleaner Element .... Service
Dry type .... Clean ★
Dry type .... Replace 36
Polyurethane .... Replace 12
Models with closed PCV system

Manifold Heat Control Valve Shaft .... **MH** ★

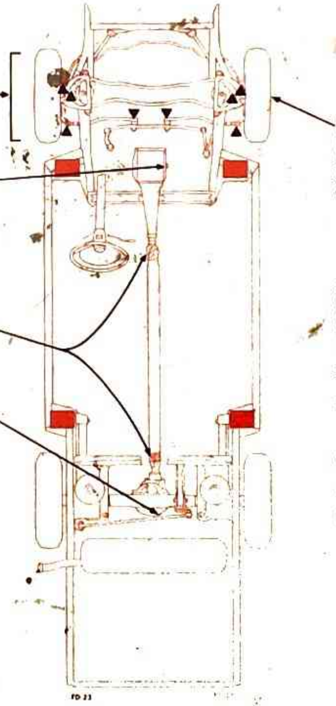
TRANSMISSION, Automatic .. FA

Check level, engine idling, PARK position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and disconnect fill pipe

Front Wheel Bearings .... Repack **WB** 30
Initial torque, 17-25 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
30 Every 30,000 miles
36 Every 36,000 miles or 3 years
C Conditional service
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD V-8

1961 All Models Except Thunderbird;
1962 Galaxie

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	29NF 27F	55, 65 70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
292 engine 160*
352, 390, 406 engines 180*
* Permissible variation is plus or minus 20 psi

SPARK PLUGS

Autolite: 292 eng. BF[illegible]; 352, 390, 406 engs. BF42; 406 Super eng. BF32
Gap: 406 Super eng. .025"; others .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

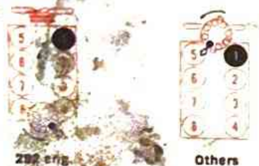
IGNITION POINTS

FoMoCo
Gap: Single points, .014"-.016"; dual points, each set, .019"-.021"
Dwell angle: Single and dual points, each set, 26°-28½°; dual points, total dwell, 32°-34°

CONDENSER

FoMoCo Capacity: .21-.25 mfd

Cylinder Numbering Sequence

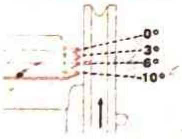


Firing Order:
292 engine 1, 5, [illegible], 6, 3, 7, 2
352, 390, 406 engines 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect [illegible]
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line (except dual point distributor)
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1961: 292 eng. Manual Trans. 3° (Allowable range, 2°-8°) Auto. Trans. 10° (Allowable range, 2°-15°)
352, 390 engs. Manual Trans. 3° (Allowable range, 2°-8°) Auto. Trans. 6° (Allowable range, 2°-11°)
390 Super eng. (Allowable range, 10°-19°)
1962: 292 eng. Manual Trans. 5° (Allowable range, 2°-10°) Auto. Trans. 12° (Allowable range, 2°-17°)
352, 390 engs. Manual Trans. 5° (Allowable range, 2°-10°) Auto. Trans. 8° (Allowable range, 2°-13°)
406 eng. 8° (Minimum allowable, 2°) 390, 406 Super engs. (Allowable range, 10°-19°)

FUEL PUMP

AC model: 5594873, -4875*, -3461•■, -3450*•■
Pressure: 4-6 lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm
* With electric wipers • With Air Conditioning
■ With 352, 390, 406 engines

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD			
2-bbl.	1-1½	index*	2 lean
4-bbl	1-1½	index*	2 lean
HOLLEY			
2-bbl. (Primary)	1-1½	index	—
(Secondary)	¾-1¼	—	—
4-bbl.	1-1½	index	index

* 390 engine, 2 lean

ENGINE IDLE SPEED

Manual Trans. 500-525* rpm
Auto. Trans. 450-475 rpm** in DRIVE
Air Cond. Same rpm, with unit turned ON
* 390 eng. 575-600 rpm; 390, 406 Super engs. 675-700 rpm
** 1962, 390 eng. 475-500 rpm

VALVE CLEARANCES

(engine hot and running)
292 engine: Intake .019", exhaust .019"
352, 390 engines: Hydraulic lifters, nonadjustable
390, 406 Super engs.: Intake .025"; exhaust .025"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	20	19

Cooling system pressure, 12-15 pounds

Distributor Shaft (oil cup) .. Sparingly 10W **MO**
292-cu. in. engine, at rear
12 1961
C 1962
12 Wick under rotor ...... Sparingly 10W **MO**

Fuel Filter .... Replace
Replace initially at 4,000 miles
292-, 352-cu. in. engine, at front of carburetor
8 1961
30 1962, except 390, 406 Super engine
390, 406 Super eng. replace every 6,000 miles

★ **Power Steering Reservoir** .... **FA**
Fill to "F" mark on gage
With air conditioning, reservoir on left fender apron, fill to ¾ to 1 inch from top

8 **Fuel Pump Sediment Bowl & Screen** 1961 . Clean

Crankcase Dipstick .... Check level
292-cu. in. engine, right side

Air Cleaner Element .... Service
★ Dry type .... Clean
30 Dry type .... Replace

★ **Oil Filter** (under car) .... Replace
Add extra quart oil
352-, 390-, 406-cu. in. engines, forward

C **Steering Gear** (plug) .... **SG**
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... **HB**
Fill to ⅜ inch below top of cylinder

30 **Front Suspension and Steering Linkage** .... (9 plugs) **LM**
Relubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed: 352-, 390-cu. in. Special engines with overdrive, **4 pints**; all other models with or without overdrive, **3 pints**; 4-speed, **3 pints**
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

30 **Universal Joint Spline** 1961 .... Coat 1 oz. **SS**
On models with automatic transmission

30 **Universal Joints** (plug) .... **UJ**
Relubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below −25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Letter with axle number on patent plate on driver's door pillar

GAS TANK .... Gallons

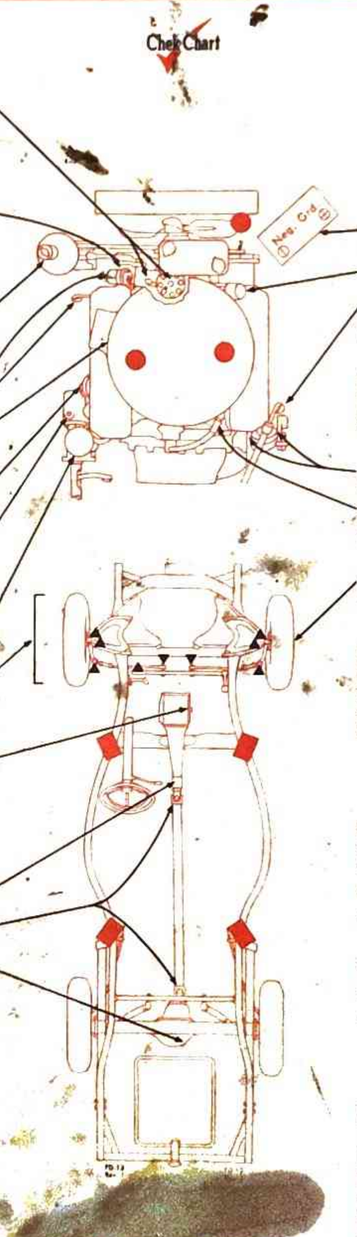
Station wagons	21
All other models	20

TIRES

Pressure	Front	Rear
7.50-14, 8.00-14	24*	24*
8.00-14 station wagon	24*	28*

*For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

Rotate tires, Method A, then balance wheels
8 1961
12 1962
More often under severe road conditions and heavy loads



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above −10°	10W-30
Below −10°	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Oil Fill Cap .... Wash ★

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
Fordomatic	5	9
Cruise-O-Matic	5	10

DRAIN and REFILL Not recommended
Fordomatic, remove 2 converter plugs and transmission oil pan
Cruise-O-Matic, remove 2 converter plugs and disconnect fill pipe

Manifold Heat Control Valve Shaft .... **MH** ★
On all 1961 engines and 1962 292-cu. in. engine

PCV System Valve .... Clean ★
Disassemble and clean all parts; also, exhaust line
292-cu. in. engine, at front of carburetor

Front Wheel Bearings .... Repack **WB**
Repack on mileage basis only
1961 .... **12**
1962 .... **30**
1961, initial torque, 11½-12½ ft. lb., while rotating wheel; final adjustment, loosen ⅙ but not more than ⅓ turn
1962, initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Turn star wheel adjuster until shoes contact drum lightly
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjustment ¾ turn with finger pressure only. If adjustment screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1961, Every 4,000 miles or 4 months
1962, Every 6,000 miles or 6 months
6 Every 6,000 miles or 6 months
8 Every 8,000 miles or 8 months
12 Every 12,000 miles or 12 months
30 Every 30,000 miles or 2 years
C Conditional service
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

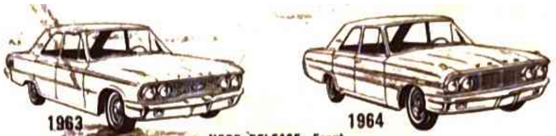
KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50A; with 406-cu. in. engine, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SS	Special Purpose Lubricant Specification No. M1C-39
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant. Heavy-Duty Dual Drive, use Spec. No. ESW-M-2C57-A

FORD V-8

1963-64 Galaxie, 300, Custom



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
260, 289 engs.	24F	55, 65
352, 390 engs.	29NF	55, 65
406, 427; Opt. 352, 390 engs.	27F	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

		psi
1963:	260, 289 engs.	150
	352, early 390, 406, 427 engs.	180
	Late 390 eng.	190
1964:	289 eng.	130-170
	352, 390 2-bbl., 427 engs.	160-200
	390 4-bbl. eng.	170-210

Maximum variation between cylinders, 20 psi

SPARK PLUGS

Autolite: BF42 ex. 390 Super, 406, 427 engs. BF32
Gap: .032"-.036" except 1963 390 Super, 406, 427 engs., .028"-.032" Torque: 15-20 ft. lb.

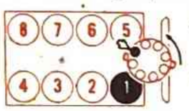
IGNITION POINTS

FoMoCo Gap: 1963 single points, .014"-.016"; dual points, each set, .019"-.021"; 1964, .014"-.016" except 427 2 4-bbl. eng., .019"-.021"
Dwell angle: Single and dual points, each set, 26°-28½° except 427 2 4-bbl. eng., 22°-24°, Dual points, total dwell, 1963 32°-34°; 1964 33°-36°

CONDENSER

FoMoCo Capacity: .21-.25 mfd

Cylinder Numbering Sequence

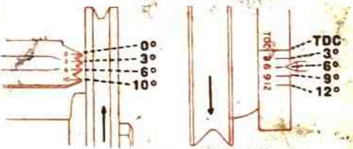


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

Follow procedure listed on Chart FD-16

Timing Mark and Setting



1963

1963 289 eng.
1964

Timing Setting (Before Top Dead Center):
1963: 260, 289 engs.
Man. Trans. 6° (2°-11°); Auto. Trans. 10° (2°-15°)
352, 390 engs.
Man. Trans. 3° (2°-8°): Auto. Trans. 6° (2°-11°)
390 Super, 406, 427 engs. 8° (2°-8°)
1964: 289 eng. Man. Trans. 6°*; Auto. Trans. 10°*
352 eng. Man. Trans. 6°**; Auto. Trans. 10°**
390 2-bbl., Man. Trans. 6°**; Auto. Trans. 6°**
390 4-bbl., Man. Trans. 4°**; Auto. Trans. 6°**
390 Police, Man. Trans. 4°*; Auto. Trans. 6°*
427 eng., 8°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

** For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical Pressure:
1963, 260 eng. 4-5 lb.; others 4-6 lb.; at 500 rpm
1964, 289 eng. 4-6 lb.; others 4.5-6.5 lb.; 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

		Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD				
2-bbl.	260 eng.	1-1½	4 lean	4 lean
	289 eng. 1963	1-1½	4 lean	4 lean
	289 eng. 1964	1-1½	2 rich*	2 rich
	All others	1-1½	index	2 lean
4-bbl.	352 eng. 1964	1-1½	1 lean	3 lean
	390 eng. 1963	1-1½	2 lean	2 lean
	390 eng. 1964	1-1½	1 rich	1 lean
	All others	1-1½	index	2 lean
HOLLEY				
2-bbl.	(Primary)	1-1½	index	—
	(Secondary)	¾-1¼	—	—
4-bbl.	(Primary)	1-1½	index	—
	(Secondary)	1-1½	—	—

* Carb. Part No. C4AF-9510-DD, index

ENGINE IDLE SPEED

Man. Trans. 575-600 rpm; ex. 1963 429 eng. 700-800 rpm. 1964 427 eng., 700 rpm
Auto. Trans.: 1963, 450-475 rpm in DRIVE
1964, 289, 352, 390 engs. 475-500 rpm; 390 Police, 550-575 rpm; in DRIVE
With air conditioning, same rpm but with unit turned ON and in operation for 20 minutes

VALVE CLEARANCES

(engine hot and running)
390 Police, 406, 427 engs.: In. .025"; Ex. .025"
Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All except 260-, 289-cu. in. eng.	20½	19½
260-, 289-cu. in. eng.	14½	13½

Cooling system pressure, 12-15 pounds

[36] **Fuel Filter** .... Replace
406, 427-cu. in. engines, right side under air cleaner, replace every 6,000 miles

[★] **Power Steering Reservoir** .... FA
Fill to "F" mark on gage, or ¼ inch from top of reservoir. With air conditioning, reservoir on left fender apron fill to ¾ to 1 inch from top

[36] **Power Steering Filter** .... Replace
Inside reservoir

[★] **Oil Filter** (under car) .... Replace
Add extra quart oil

[★] **Oil Fill Cap** .... Wash
352-, 390-, 406-, 427-cu. in engines, right side, front of air cleaner

[C] **Distributor Shaft** (fill oil cup) .... 10W MO
[C] Wick under rotor ..... Sparingly 10W MO

Air Cleaner Element .... Service
[★] Dry type .... Clean
Dry type .... Replace
[30] 1963 [36] 1964
[12] Polyurethane .... Replace
1964 models with closed PCV system

[C] **Steering Gear** (plug) .... SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

[★] **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of cylinder

[36] **Front Suspension and Steering Linkage** ..... (10 or 12 plugs) LM
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

[★] Maintain level to fill plug hole
CAPACITY 3-speed, 3½ pints; with overdrive 260-, 289-cu. in. engines 3¾ pints, others 4½ pints. 4-speed, Warner 3½ pints; Ford 4 pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

[36] **Universal Joints** (plug) .... UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below −25°, use 80 grade
[★] Maintain level to fill plug hole
CAPACITY 5 pints; 406-, 427-cu. in. eng., 5½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Letter with axle number on patent plate on driver's door pillar

GAS TANK .... Gallons

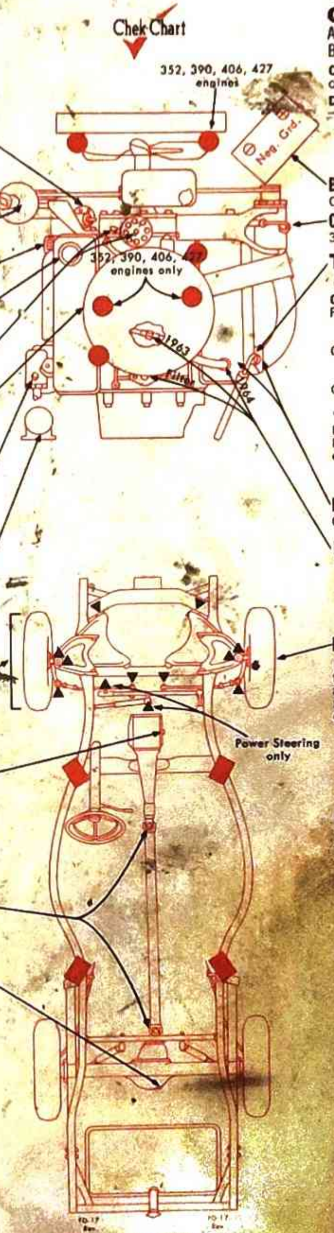
Station wagons	20½
All other models	19½

TIRES .... Pressure

	Front	Rear
7.00-14, 7.50-14, 8.00-14	24*	24*
8.00-14 station wagon	24*†	28*†

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds
† Tires with 8-ply rating, medium load, front 26, rear; 32; heavy load, front 28, rear 36

[C] Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above −10°	10W-30
Below −10°	5W-20

CAPACITY 260-, 289-cu. in. engines, 4 quarts; all others, 5 quarts
DRAIN and REFILL
— See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Crankcase Dipstick .... Check level
352-, 390-, 406-, 427-cu. in. engines, left side

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK [★]

CAPACITY, quarts	Initial Refill	Total Refill
Fordomatic		
352-, 390-cu. in. eng.	5	9
260-, 289-cu. in. eng.	4	6
Cruise-O-Matic		
352-, 390-cu. in. eng.	5	10
289-cu. in. eng.	5	10
Cruise-O-Matic C4		
289-cu. in. eng.	4	8½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs; Cruise-O-Matic, disconnect fill pipe; Fordomatic, remove oil pan

Manifold Heat Control Valve Shaft .... MH [★]
On 406-, 427-cu. in. engines only

PCV System .... Service
Valve 1963, early 1964 .... Clean [★]
Late 1964, jiggle-pin type .... Replace [12]
All parts .... Clean [12]
Including filter, if so equipped

Front Wheel Bearings .... Repack WB [24]
Initial torque, 15-20 ft. lb. while rotating wheel, then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Turn star wheel adjuster until shoes contact drum lightly
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjustment ¾ turn with finger pressure only. If adjustment screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- [★] Every 6,000 miles or 6 months
- [12] Every 12,000 miles or 12 months
- [24] Every 24,000 miles
- [30] Every 30,000 miles or 2 years
- [36] Every 36,000 miles or 3 years
- [C] Conditional service
  - Lubricate distributor shaft and wick at time of tune-up
  - Check steering gear periodically and add lubricant as required
  - Rotate tires and balance wheel as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A; with 390-, 406-, 427-cu. in. engines, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD V-8

1965 Galaxie, Custom

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
289, 352, 390 M.T.	22HF	45
Optional	24F	55
Optional	27HF	70
352, 390 A.T.	24F	55
Optional	27HF	70
427	27HF	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
289 engine	130-170
352, 427 engines	160-200
390 engine	170-210

Maximum variation between cylinders, 20 psi

SPARK PLUGS

Autolite: 289, 352, 390 engs. BF42; 427 eng. BF32
Gap: BF42 .032"-.036"; BF32 .028"-.032"
Torque: 15-20 ft. lb.

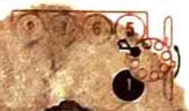
IGNITION POINTS

FoMoCo
Gap: Single points .014"-.016"; dual points .019"-.021"
Dwell angle: Single points 26°-28½°; dual points total dwell 30°-33°, each set with same dwell

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

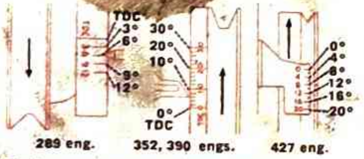


Firing Order: 1, 5, [illegible] 3, 7, 8

TIMING PROC[illegible]

1. Bring engine [illegible]ing temperature
2. Connect tac[illegible]
3. Connect tim[illegible] to No. 1 spark plug or distributor ca[illegible]
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line, reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
289 eng. 6° †
352 eng. 6° * †
390 eng.: Man. Trans. 4° * †; Auto. Trans. 6° * †
427 eng. 8° †

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting.

† If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 289 eng. 4-6 lb.; 352, 390, 427 engs. 4.5-6.5 lb.; at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD			
2-bbl. C5AF-A, AH	1-1½	index	index
C5AF-B, AJ	1-1½	2 rich	2 rich
4-bbl.	1-1½	index	index
HOLLEY			
4-bbl.	1-1½	index	—

ENGINE IDLE SPEED

Manual Trans.: 289, 352, 390 engs. 575-600 rpm*; 427 eng. 700-800 rpm*
Auto. Trans.: 475-500 rpm* in DRIVE
With air conditioning, same rpm but with unit turned ON and in operation for 20 minutes
On cars equipped with vacuum release parking brake, remove vacuum line from power unit of parking brake assembly and plug line to keep parking brake engaged

* Headlights ON. Idle compensator held closed, if so equipped

VALVE CLEARANCES

(engine hot and running)
427 eng.: Intake .025"; exhaust .025"
289, 352, 390 engs.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All except 289-cu. in. eng.	20½	19½
289-cu. in. eng.	15½	14½

Cooling system pressure, 12-15 pounds

36 **Fuel Filter** . . . . Replace
427-cu. in. engine, at front of left valve cover

★ **Power Steering Reservoir** . . . . FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

★ **Oil Filter** (under car) . . . . Replace
Add extra quart oil

★ **Oil Fill Cap** . . . . Wash
427-cu. in. engine, right side, front of air cleaner

Distributor
C Wick under rotor . . . . . . Sparingly 10W MO

Air Cleaner Element . . . . Service
★ Dry-type . . . . Clean
36 Dry type . . . . Replace
12 Polyurethane . . . . Replace
Models with closed PCV system

C **Steering Gear** (plug) . . . . SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) . . . . HB
Fill to ⅜ inch below top of reservoir

36 **Front Suspension and Steering Linkage** . . . . (8 plugs) LM
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual . . 80 EP

★ Maintain level to fill plug hole

CAPACITY 3-speed, 3½ pints; with overdrive, 289-cu. in. eng. 3¾ pints, 390-cu. in. eng. 4½ pints. 4-speed, 4 pints

DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

36 **Universal Joints** (plug) . . . . UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL . . . . 90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole

CAPACITY 5 pints; 427-cu. in. eng., 5½ pints; Equa-Lock, 5½ pints

DRAIN and REFILL Not recommended

EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK

	Gallons
All models	20

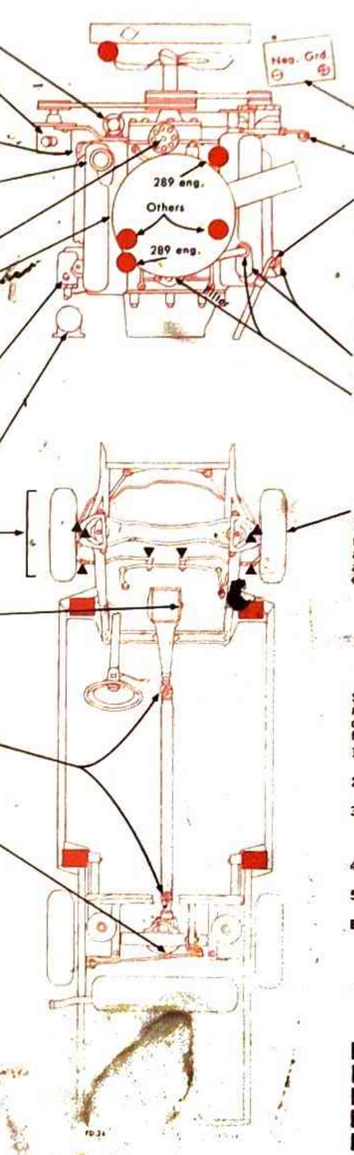
TIRES

Pressure	Front	Rear
7.35-15, 7.75-15, 8.15-15	24*	24*
8.15-15 station wagon	24*	28*†

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

† Tires with 8-ply rating, medium load, front 26, rear 32; heavy load, front 28, rear 36

C Rotate tires, Method A, then balance wheels



▨ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE . . . . "MS" MO

Above –10° 10W-30
Below –10° 5W-20

CAPACITY 289-cu. in. engine, 4 quarts; all others, 5 quarts

DRAIN and REFILL
See Service Instructions, page 4

Battery . . . . Check and fill
Check level monthly

Crankcase Dipstick . . . . Check level
352-, 390-, 427-cu. in. engines, left side

TRANSMISSION, Automatic . . FA

Check level, fluid warm, engine idling, in PARK . . ★

CAPACITY, quarts	Initial Refill	Total Refill
Cruise-O-Matic (Code 4)		
352-, 390-cu. in. eng.	5	10
289-cu. in. eng.	5	10
Cruise-O-Matic C4 (Code 6)		
289-cu. in. eng.	5	10*

*Dry capacity shown, fill only to FULL mark

DRAIN and REFILL Not recommended
Remove 2 converter plugs and disconnect fill pipe

Manifold Heat Control Valve Shaft . . . . MH ★
On 427-cu. in. engine only

PCV System . . . . Service
Valve . . . . Replace 12
All parts . . . . Clean 12
Including filter on 427-cu. in. engine

Front Wheel Bearings . . . . Repack WB 30
Initial torque, 17-25 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¼ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
30 Every 30,000 miles
36 Every 36,000 miles or 3 years
C Conditional service
Lubricate distributor wick under rotor at time of tune-up
Check steering gear periodically and add lubricant as required
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A; with 390-, 427-cu. in. engines, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant.

FORD FAIRLANE 6

1962-65 All Models

1962
1963
1964
1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1962-64	22NF	40
	24F	55
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

1962-64 150-190
1965 155-195
Max. variation: 1962-63, 10 psi; 1964-65, 20 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

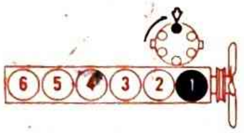
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

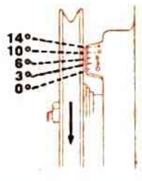


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1962: Manual Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 10° (Allowable range, 2°-15°)
1963: Manual Trans. 6° (Allowable range, 2°-11°)
Auto. Trans. 12° (Allowable range, 2°-17°)
1964-65: Man. Trans. 6°*; Auto. Trans. 12°*
* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1962-64, 3½-5½ lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD 1-bbl.	1-1½	manual*	manual**
HOLLEY 1-bbl.	1-1½	—	—

* 1965, 2 lean ** 1965, index

ENGINE IDLE SPEED

Manual Trans.: 1962-63, 500-550 rpm; with positive crankcase ventilation, 550-600 rpm; 1964, 500-525 rpm; 1965, 575-600*
Auto. Trans.: 1962, 475-525 rpm in DRIVE with positive crankcase ventilation, 525-575 rpm; 1963-65, 500-525 rpm in DRIVE*
With air conditioning, same rpm as listed but with unit turned ON and in operation for 20 minutes
* 1965, Headlights ON

VALVE CLEARANCES

(engine hot and running)
1962: Intake .016"; exhaust .016"
1963-65: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	9½	8½

Cooling system pressure, 12-15 pounds

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

12 **PCV System** Some 1963 .... Clean
Clean tube and separator

★ **Oil Filter** .... Replace
Add extra quart oil

C **Distributor Shaft** (fill oil cup)........ 10W MO

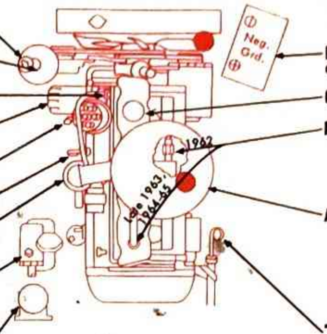
Crankcase Dipstick............ Check level

Fuel Filter .... Replace
36 1963-65 30 1962

C **Steering Gear** (plug).................... SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap).............. HB
Fill to ⅜ inch below top of cylinder

Chek-Chart



CRANKCASE .... "MS" MO

Above −10° 10W-30
Below −10° 5W-20
CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.................... Check and fill
Check level monthly

Oil Fill Cap........................ Wash ★

PCV System .... Service
Valve 1962-63, early 1964........ Clean ★
Others, jiggle-pin type........ Replace 12
All parts .... Clean 12

Air Cleaner Element.................. Service
Dry type .... Clean ★
Dry type .... Replace
1962 30 1963 24 1964-65 36
Polyurethane .... Replace 12
1964-65 models with closed PCV system

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and transmission oil pan

Front Suspension and Steering Linkage....... (8 to 10 plugs) LM
Lubricate using special adapter. Reinstall plug
36 1963-65 30 1962

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended

Universal Joints (plug)................. UJ
Lubricate using special adapter. Reinstall plug
36 1963-65 30 1962

DIFFERENTIAL .... 90 HP*

Below −25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK ....Gallons

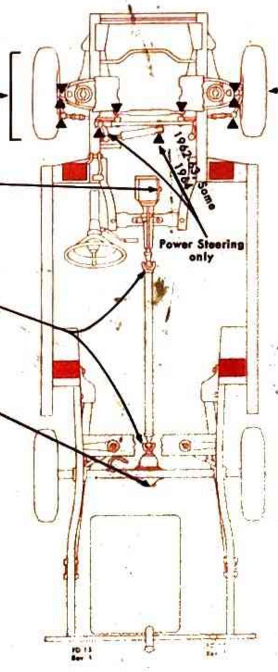
1962-63, 1965	16
1964	15½

TIRES

...........Pressure	Front	Rear
6.50-13, 6.50-14, 6.95-14	24*	24*
7.00-13	24*	24*
7.00-14, 7.35-14	24*	24*
Station Wagon	24*	28*

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

Rotate tires, Method A, then balance wheels
C 1963-65 12 1962



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

Front Wheel Bearings.............. Repack WB
Repack on mileage basis only
1963-64 24 1962, 1965 30
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
30 Every 30,000 miles or 2 years
36 Every 36,000 miles or 3 years
C Conditional service
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub.	Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid	Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty	SAE 70R3
HP*	Hypoid Gear Lubricant	Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly	Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil	
SG	Steering Gear Lubricant	Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease	Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease	Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD FAIRLANE V-8

1962-65 All Models

1962
1963
1964
1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1962-64	24F	55, 65
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 130-170

Max. variation: 1962-63, 10 psi; 1964-65, 20 psi

SPARK PLUGS

Autolite BF32 289 High Perf.; others BF42

Gap: 1962-63 .035"; 1964 .032"-.036"; 1965 BF32 .028"-.032". BF42 .032"-.036"

Torque: 15-20 ft. lb.

Do not use gasket on tapered seat plugs

IGNITION POINTS

FoMoCo

Gap: Single points .014"-.016"; dual points .019"-.021"

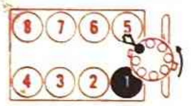
Dwell angle: Single points 26°-28½°; dual points total dwell 30°-33°, each set with same dwell

CONDENSER

FoMoCo

Capacity: .21-.25 mfd

Cylinder Numbering Sequence

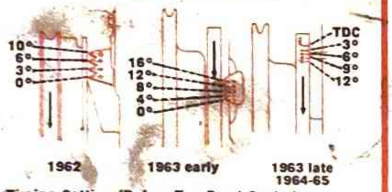


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):

1962: 5° (Allowable range, 2°-10°)

1963: 221 eng. Manual Trans. 4° (Range 2°-9°)
Auto. Trans. 12° (Allowable range, 2°-17°)
260 eng. Manual Trans. 4° (Range 2°-9°)
Auto. Trans. 10° (Allowable range 2°-15°)
289 eng. 10° (Allowable range, 2°-15°)

1964: 260, 289 (2-bbl. carb.) engs.
Manual Trans. 6°*; Auto. Trans. 10°*
289 (4-bbl. carb.) eng. Manual Trans. 10°*

1965: 289 High Performance, 12°*
289 Others, 6°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical

Pressure: 1962-64, 4-6 lb.; 1965, 6 lb.; at 500 rpm

Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD		Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1962	2-bbl.	1-1½	2 lean	2 lean
1963	2-bbl.	1-1½	4 lean	4 lean
1964	2-bbl.	1-1½	2 rich	2 rich
	4-bbl.	1-1½	3 lean	3 lean
1965	2-bbl.	1½	2 rich*	2 rich
	4-bbl.	1-1½	2 rich**	2 rich

* C5ZF-A & G, index

** C4GF-AE, index

ENGINE IDLE SPEED

Manual Trans.: 1962, 500-525 rpm; 1963-64, 575-600 rpm except 289 H.P. 700-800 rpm; 1965, 575-600 rpm* except 289 H.P. 750-775 rpm*

Auto. Trans.: 475-500 rpm*, except 1965 289 H.P. 650-675 rpm*; in DRIVE

With air conditioning, same rpm as listed but with unit turned ON and in operation for 20 minutes

* 1965, Headlights ON

VALVE CLEARANCES

(engine hot and running)

289 High Performance engine:

Intake .018"; exhaust .018"

Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	14½	13½

Cooling system pressure, 12-15 pounds

Fuel Filter (under car)..............Replace

36 1963-65 30 1962

★ **Power Steering Reservoir**...............FA

Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

1962-64, with air conditioning, reservoir on left fender apron; fill to ¾ to 1 inch from top

36 **Power Steering Filter**..............Replace

1963-64 only. Inside reservoir

★ **Oil Filter** (under car)................Replace

Add extra quart oil

★ **Oil Fill Cap**...........................Wash

1962-63, right side, front of air cleaner

C **Distributor Shaft** (fill oil cup)........10W **MO**

1965, no oil cup

C Wick under rotor.......Sparingly 10W **MO**

C **Steering Gear** (plug)......................**SG**

Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap)...............**HB**

Fill to ⅜ inch below top of cylinder

Front Suspension and Steering Linkage.......(8 to 10 plugs) **LM**

Lubricate using special adapter. Reinstall plug

36 1963-65 30 1962

TRANSMISSION, Manual..80 **EP**

★ Maintain level to fill plug hole

CAPACITY 1962 3½ pints, with overdrive, 4 pints. 1963-65 3-speed 3½ pints, with overdrive, 3½ pints; 4-speed, Warner 3¾ pints, Ford 4 pints

DRAIN and REFILL Not recommended

Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

Universal Joints (plug)................ **UJ**

Lubricate using special adapter. Reinstall plug

36 1963-65 30 1962

DIFFERENTIAL ....90 **HP***

Below –25°, use 80 grade

★ Maintain level to fill plug hole

CAPACITY 4½ pints; 289-cu. in., 271-hp engine, 5 pints

DRAIN and REFILL Not recommended

EQUA-LOCK IDENTIFICATION:

Axle model indicated by a letter on patent plate at driver's door

GAS TANK ....Gallons

1962-63, 1965	16
1964	15½

TIRES...........Pressure

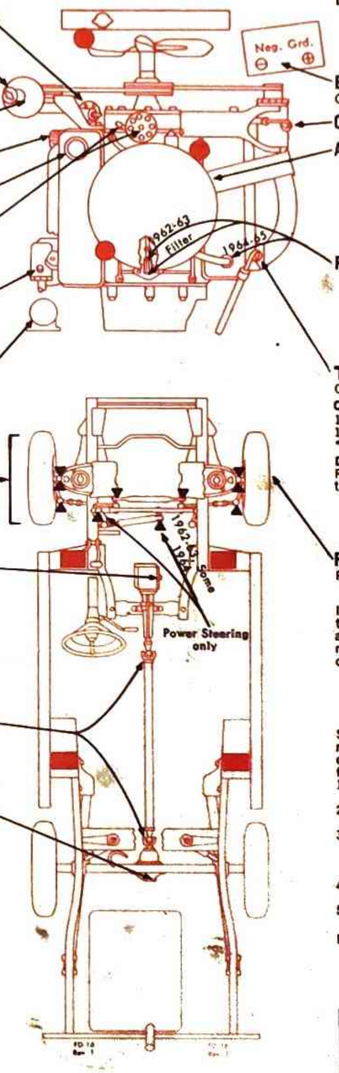
	Front	Rear
6.50-14, 6.95-14	24*	24*
7.00-13	24*	24*
7.00-14, 7.35-14	24*	24*
Station Wagon	24*	28*

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

Rotate tires, Method A, then balance wheels

C 1963-65 12 1962

Chek Chart



🟥 Position for lift adapter

▲ Prepacked bearing

● Cooling system drain

CRANKCASE..............."MS" **MO**

Above –10° 10W-30

Below –10° 5W-20

CAPACITY 4 quarts

DRAIN and REFILL

See Service Instructions, page 4

Battery........................Check and fill

Check level monthly

Crankcase Dipstick.............Check level

Air Cleaner Element....................Service

Dry type ....Clean ★

Dry type ....Replace

1962-63 30 1964-65 36

Polyurethane ....Replace 12

1964-65 models with closed PCV system

PCV System ....Service

Valve 1962-63, early 1964.........Clean ★

Others, jiggle-pin type..........Replace 12

All parts ....Clean

Including filter on 1962-63 only

1962 24 1963-65 12

TRANSMISSION. Automatic..FA

Check level, fluid warm, engine idling, in PARK.. ★

CAPACITY, quarts	Initial Refill	Total Refill
1962-63	4	7½*
1964-65	4	8½*

*Dry capacity shown, fill only to FULL mark

DRAIN and REFILL Not recommended

Remove 2 converter plugs, disconnect fill pipe, then remove oil pan

Front Wheel Bearings............Repack **WB**

Repack on mileage basis only

1963-64 24 1962, 1965 30

Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months

12 Every 12,000 miles or 12 months

24 Every 24,000 miles or 2 years

30 Every 30,000 miles or 2 years

36 Every 36,000 miles or 3 years

C Conditional service

Lubricate distributor shaft and wick under rotor at time of tune-up

Check steering gear periodically and add lubricant as required

Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP Mild Extreme Pressure Gear Lub.
Specification No. ESW-M-2C83-A

FA Ford Automatic Transmission Fluid
Specification No. M2C33-D

HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3

HP* Hypoid Gear Lubricant
Specification No. ESW-M-2C50-A; with 289-cu. in., 271-hp engine, ESW-M-2C57-A

LM Lithium Grease, with Moly
Specification No. ESA-M-1C47-A or ESA-M-1C75-A

MO Motor Oil

SG Steering Gear Lubricant
Specification No. ESW-M-1C87-A

UJ Universal Joint Grease
Specification No. ESA-M-1C57-A

WB Wheel Bearing Grease
Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

1960
1961
1962

HOOD RELEASE: Front

FORD FALCON

1960-62 All Models

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	22NF 24F	40 55

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
1960-61	160-180*
1962	150-190*

* Maximum variation between cylinders, 10 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gaskets on tapered seat plugs

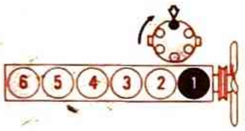
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

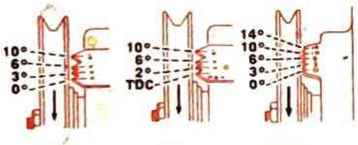


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



1960 1961 1962

Timing Setting (Before Top Dead Center):
Manual Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 10° (Allowable range, 2°-15°)

FUEL PUMP

AC model 5594897
Pressure: 3½-5½ lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)
1-bbl.	1-1½

ENGINE IDLE SPEED

Manual Trans.: 1960, 500-525 rpm; 1961-62, 500-550 rpm, with positive crankcase ventilation, 550-600 rpm

Auto. Trans.: 1960, 475-500 rpm in DRIVE; 1961-62, 475-525 rpm, with positive crankcase ventilation, 525-575 rpm; in DRIVE

VALVE CLEARANCES

(engine hot and running)
Intake .016"; exhaust .016"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	9¾	8¾

Cooling system pressure, 12-15 pounds

Oil Filter .... Replace
Add extra quart oil
4 1960-61
6 1962

12 **Distributor Shaft** (oil cup) .... Sparingly 10W **MO**
Crankcase Dipstick .... Check level
Air Cleaner Element .... Service
Dry type .... Clean
8 1960-61
6 1962
Dry type .... Replace
24 1960-61
30 1962

8 **Fuel Pump Sediment Bowl and Screen** .... Clean
1960-61 only
Fuel Filter .... Replace
1961, right side. Replace initially at 4,000 miles
8 1960-61
12 1962

6 **Steering Gear** (plug) .... **SG**
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

4 **Brake Master Cylinder** (cap) .... **HB**
Fill to ⅜ inch below top of cylinder

★ **Front Suspension and Steering Linkage** .... (12 fittings) **CL**

★ **Clutch Equalizer Shaft** .... **CL**
On 1960, some 1961

TRANSMISSION, Manual .... 80 EP

4 Maintain level to fill plug hole
CAPACITY 3-speed, 2½ pints; 4-speed, 4¾ pints
DRAIN and REFILL Not recommended

24 **Universal Joint Spline** 1960-61 .... Coat 1 oz. **SS**
On models with automatic transmission

Universal Joints .... Repack **UJ**
24 1960-61
30 1962

DIFFERENTIAL .... 90 HP

Below -25°, use 80 grade
4 Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended

GAS TANK .... Gallons

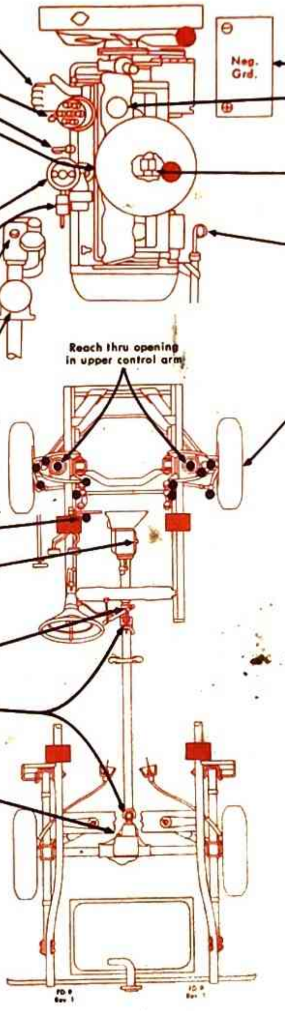
All models 14

TIRES

Pressure	Front	Rear
6.00-13, 6.50-13	24*	24*
6.50-13 station wagon	22*	26*◆
6.50-13 Ranchero	24*	30*

* For considerable high-speed driving, add 4 pounds
◆Passenger and cargo loads or with snow tires, 30

Rotate tires, Method A, then balance wheels
8 1960-61
12 1962
More often under severe road conditions and heavy loads



🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE .... "MS" MO

Above -10° 10W-30
Below -10° 5W-20
CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Fill Cap .... Wash
1960-61 4
1962 6

PCV System Valve .... Clean
Disassemble and clean all parts; also, exhaust line
1960-61 4
1962 6

TRANSMISSION, Automatic .... FA

Check level, fluid warm, engine idling, in PARK 4

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	6¼

DRAIN and REFILL
1960 24
Remove 2 converter plugs and transmission plug
1961-62 Not recommended
Remove 2 converter plugs and transmission oil pan

Front Wheel Bearings .... Repack **WB** 12
Repack on mileage basis only
1960-61, initial torque, 11½-12½ ft. lb., while rotating wheel; final adjustment loosen ⅙ but not more than ⅓ turn
1962, initial torque, 12-15 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Disconnect parking brake cable at equalizer
2. Using a suitable tool inserted into adjustment opening, turn star wheel adjuster until slight drag is felt when wheel is turned
3. Back off adjustment until drum turns freely without drag
4. Repeat procedure at each wheel
5. Reconnect parking brake cable and adjust

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

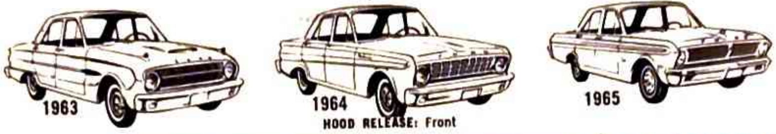
★ Every 1,000 miles or 30 days
4 Every 4,000 miles or 4 months
6 Every 6,000 miles or 6 months
8 Every 8,000 miles or 8 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
30 Every 30,000 miles or 2 years

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP	Hypoid Gear Lubricant Specification No. ESW-M2C50-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SS	Special Purpose Lubricant Specification No. M1C-39
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

FORD FALCON 6
1963-65 All Models



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
1963-64	22NF	40
	24F	55, 65
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
1963-64 150-190
1965 155-195
Max. variation: 1963, 10 psi; 1964-65, 20 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gaskets on tapered seat plugs

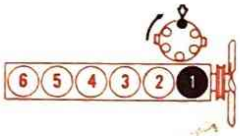
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

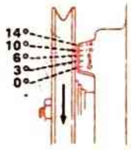


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1963:
Manual Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 10° (Allowable range, 2°-15°)
1964:
144 eng., Man. Trans. 8°*; Auto. Trans. 12°*
170 eng., Man. Trans. 6°*; Auto. Trans. 12°*
200 eng., Auto. Trans. 12°*
1965:
170, 200 engs.: Man. Trans. 6°*; Auto. Trans. 12°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1963-64, 3½-5½ lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl.	1-1½	index*†	index

* 1963, manual † 1965, 200 eng. C50F-E 2 lean

ENGINE IDLE SPEED

Man. Trans. 1963-64, 500-525 rpm; 1965, 575-600 rpm*
Auto. Trans. 500-525 rpm* in DRIVE
With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes
* 1965, Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	9½	8½

Cooling system pressure, 12-15 pounds

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

★ **Oil Filter** .... Replace
Add extra quart oil

12 **PCV System** Early 1963 .... Clean
Clean tube, filter and separator

C **Distributor Shaft** (oil cup) .. Sparingly 10W **MO**

Crankcase Dipstick .... Check level

36 **Fuel Filter** .... Replace

Air Cleaner Element .... Service
★ Dry type .... Clean
Dry type .... Replace
36 1964-65 24 1963
12 Polyurethane .... Replace
1964-65 models with closed PCV system

C **Steering Gear** (plug) .... SG
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of cylinder

36 **Front Suspension** .... (4 or 6 plugs) LM
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** ...... (5 or 6 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** .... (plug) LM
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2½ pints; 4-speed, 4½ pints
DRAIN and REFILL Not recommended

36 **Universal Joints** (plug) .... UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below −25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK .... Gallons

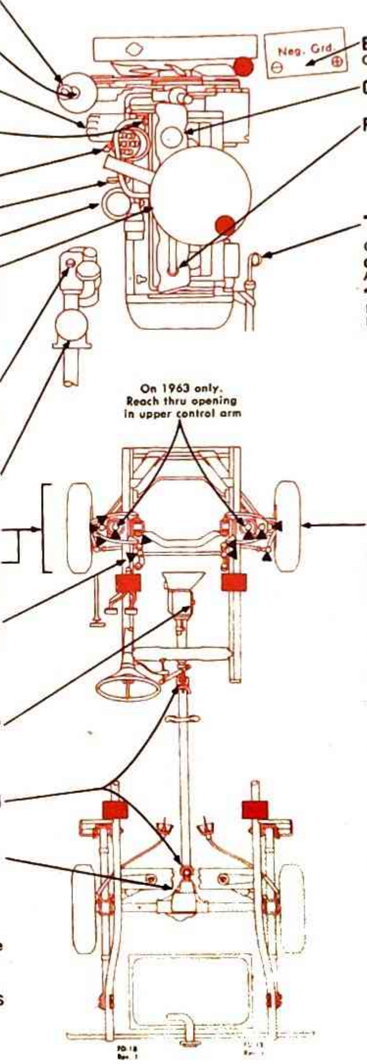
	Gallons
1963-64	14*
1965	16*
* Ranchero, Sedan Del., Station Wagon	20

TIRES

TIRES .... Pressure	Front	Rear
6.00-13, 6.50-13, 7.00-13	24*	24*
6.45-14, 6.50-14, 6.95-14	24*	24*
Station Wagon	24*	28*
Ranchero, Sedan Delivery	24*	30*

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

C Rotate tires, Method A, then balance wheels



▇ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above −10° 10W-30
Below −10° 5W-20
CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Oil Fill Cap .... Wash ★

PCV System Late 1963, 1964-65 ...... Service
Valve Late 1963, early 1964 .... Clean ★
Others, jiggle-pin type .... Replace 12
All parts .... Clean 12

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings .... Repack WB 30
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
24 **Every 24,000 miles or 24 months**
30 **Every 30,000 miles**
36 **Every 36,000 miles or 36 months**
C **Conditional service**
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required
Inspect steering linkage periodically
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD FALCON V-8

1963-65 All Models

1963
1964
1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
1963-64	24F	55, 65
1965	22HF	45
	24F	55

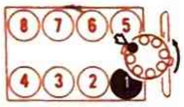
COMPRESSION PRESSURE
(at cranking speed with throttle open) psi
All 130-170
Max. variation: 1963, 10 psi; 1964-65, 20 psi

SPARK PLUGS
Autolite BF42
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

IGNITION POINTS
FoMoCo
Gap: .014"-.016"
Dwell angle: 26°-28½

CONDENSER
FoMoCo
Capacity: .21-.25 mfd

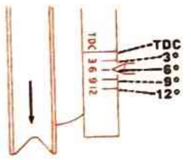
Cylinder Numbering Sequence



Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor as necessary to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):

1963:
Manual Trans. 6° (Allowable range, 2°-11°)
Auto. Trans. 10° (Allowable range, 2°-15°)

1964:
Manual Trans. 6°*
Auto. Trans. 10°*

1965: 6°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP
AC mechanical
Pressure: 1963-64, 4-6 lb.; 1965, 6 lb.; at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl.	1-1½	index*	2 rich**

* 1963, 2 lean; 1964, 2 rich
** 1963, 2 lean

ENGINE IDLE SPEED
Manual Trans. 575-600 rpm*
Auto. Trans. 475-500 rpm in DRIVE*
With air conditioning, as listed but with unit turned ON and in operation for 20 minutes

* 1965, Headlights ON

VALVE CLEARANCES
Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1963-64	14½	13½
1965	15	14

Cooling system pressure, 12-15 pounds

36 **Fuel Filter** (under car) .... Replace

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube
1963-64 with air conditioning, reservoir on left fender apron; fill to ¾ to 1 inch from top

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Oil Fill Cap** .... Wash
1963, located on right side, front of air cleaner

C **Distributor Shaft** (fill oil cup) .... 10W MO
1965, no oil cup

C Wick under rotor ...... Sparingly 10W MO

Air Cleaner Element .... Service
★ Dry type .... Clean
Dry type .... Replace
36 1964-65 30 1963
12 Polyurethane .... Replace
1964-65 models with closed PCV system

C **Steering Gear** (plug) .... SG
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of cylinder

36 **Front Suspension** .... (4 or 6 plugs) LM
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** ...... (5 or 6 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** .... (plug) LM
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP
★ Maintain level to fill plug hole
CAPACITY 3-speed, 3½ pints; 4-speed, Warner 3½ pints, Ford 4 pints
DRAIN and REFILL Not recommended

36 **Universal Joints** (plug) .... UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*
Below –25°, use 80 grade
★ Maintain level to fill plug hole
1964-65, fill plug on rear cover
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

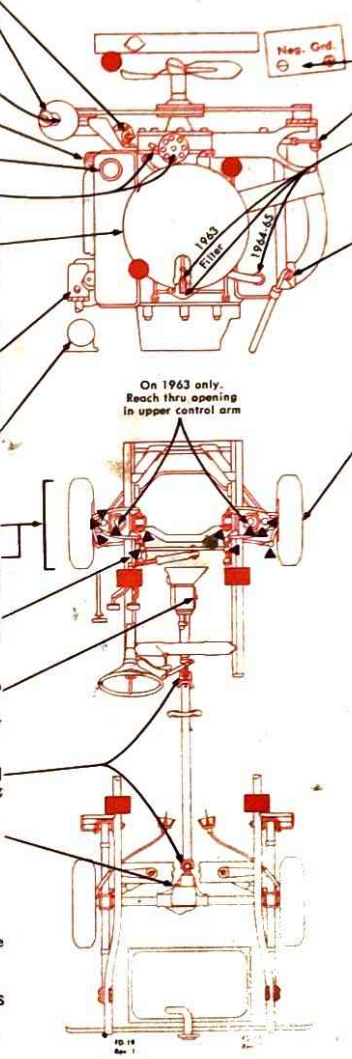
GAS TANK .... Gallons

1963-64	14*
1965	16*
* 1964-65 station wagon	20

TIRES .... Pressure	Front	Rear
6.00-13, 6.50-13, 7.00-13	24*	24*
6.45-14, 6.50-14, 6.95-14, 7.00-14	24*	24*
Ranchero, Station Wagon, Sedan Del.	24*	28*

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

C Rotate tires, Method A, then balance wheels



CRANKCASE .... "MS" MO
Above –10° 10W-30
Below –10° 5W-20
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Crankcase Dipstick .... Check level

PCV System .... Service
Valve 1963, early 1964 .... Clean ★
Others, jiggle-pin type .... Replace 12
All parts .... Clean 12
Including filter on 1963 only

TRANSMISSION, Automatic .. FA
★ Check level, fluid warm, engine idling, in PARK

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings .... Repack WB 36
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
30 **Every 30,000 miles**
36 **Every 36,000 miles or 36 months**
C **Conditional service**
Lubricate distributor shaft and wick at time of tune-up
Check steering gear periodically and add lubricant as required
Inspect steering linkage periodically
Rotate tires and balance wheels as required

🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

Code	Lubricant
EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD MUSTANG 6

1965 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22HF 24F	45 55

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	155-195

Max. variation: 20 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gaskets on tapered seat plugs

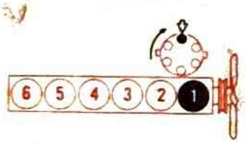
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

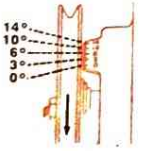


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):

Manual Trans. 6°•
Auto. Trans. 12°•

• For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 4-6 lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl.	1-1½	index•	index

• C50F-E 2 lean

ENGINE IDLE SPEED

Manual Trans. 575-600 rpm•
Auto. Trans. 500-525 rpm in DRIVE•
With air conditioning, as listed but with unit turned ON and in operation for 20 minutes
• Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All	9½	8½

Cooling system pressure, 12-15 pounds

★ **Power Steering Reservoir** .... **FA**
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

★ **Oil Filter** .... **Replace**
Add extra quart oil

C **Distributor Shaft** (oil cup)..Sparingly 10W **MO**

Crankcase Dipstick .... **Check level**

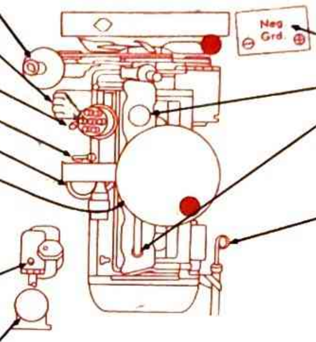
36 **Fuel Filter** .... **Replace**

Air Cleaner Element .... **Service**

- ★ Dry type .... Clean
- 36 Dry type .... Replace
- 12 Polyurethane .... Replace
  Models with closed PCV system

C **Steering Gear** (plug).................... **SG**
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap).............. **HB**
Fill to ⅜ inch below top of cylinder



CRANKCASE .... "MS" MO

Above –10°	10W-30
Below –10°	5W-20

CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... **Check and fill**
Check level monthly

Oil Fill Cap .... **Wash** ★

PCV System .... **Service**

- Valve Early models .... Clean ★
  - Late models, jiggle-pin type.... Replace 12
- All parts .... Clean 12

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All	4	7½•

•Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

36 **Front Suspension** .... **(4 plugs) LM**
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** ...... **(5 or 6 sealed bearings)**
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** .... **(plug) LM**
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual ..80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2½ pints; 4-speed, 4½ pints
DRAIN and REFILL Not recommended

36 **Universal Joints** (plug).................. **UJ**
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL ....90 HP•

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK .... Gallons

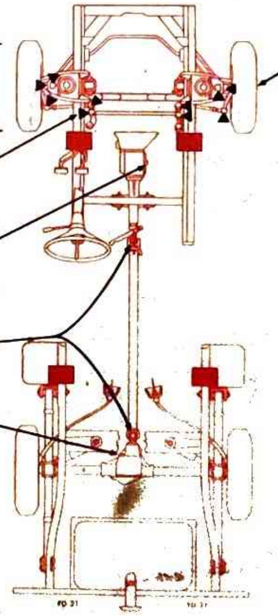
All	16

TIRES .... Pressure

	Front	Rear
6.50-13, 7.00-13	24•	24•
6.50-14, 6.95-14	24•	24•

• For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

C Rotate tires, Method A, then balance wheels



Front Wheel Bearings .... **Repack WB** 30
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: If equipped, front disc brakes require no adjustment

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

■ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
30 **Every 30,000 miles**
36 **Every 36,000 miles or 36 months**
C **Conditional service**
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required
Inspect steering linkage periodically
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP•	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

• Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

HOOD RELEASE: Front

FORD MUSTANG V-8

1965 All Models

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22HF 24F	45 55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 130-170
Maximum variation, 20 psi

SPARK PLUGS

Autolite: BF32 High Perf.; BF42 Others
Gap: BF32, .028"-.032"; BF42, .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

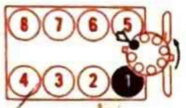
IGNITION POINTS

FoMoCo
Gap: High Perf. .019"-.021"; others .014"-.016"
Dwell angle: High Perf. 30°-33°; others 26°-28½°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

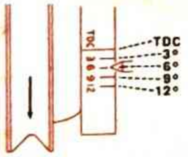


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor as necessary to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
High Performance, 12°*
Others, 6°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 6 lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl.	1½	2 rich*	2 rich
4-bbl.	1-1½	2 rich**	2 rich

* C5ZF-A & G, index
** C4GF-AE, index

ENGINE IDLE SPEED

Manual Trans.: High Perf. 750-775 rpm*; others 575-600 rpm*
Auto. Trans.: High Perf. 650-675 rpm*; others 475-500 rpm*; in DRIVE
With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes
* Headlights ON

VALVE CLEARANCES

(engine hot and running)
High Performance engine: intake .018"; exhaust .018"
Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

COOLING SYSTEM . . . . Quarts

	With Heater	Without Heater
All	14½	13½

Cooling system pressure, 12-15 pounds

36 **Fuel Filter** (under car) . . . . Replace

★ **Power Steering Reservoir** . . . . FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube. Early models with air conditioning, reservoir on left fender apron; fill to ¾ to 1 inch from top

★ **Oil Filter** (under car) . . . . Replace
Add extra quart oil

★ **Oil Fill Cap** . . . . Wash

C **Distributor Shaft** (fill oil cup) . . . . 10W MO
Late models, no oil cup

C Wick under rotor . . . . . . Sparingly 10W MO

Air Cleaner Element . . . . Service
★ Dry type . . . . Clean
36 Dry type . . . . Replace
12 Polyurethane . . . . Replace
Models with closed PCV system

C **Steering Gear** (plug) . . . . SG
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) . . . . HB
Fill to ⅜ inch below top of cylinder

36 **Front Suspension** . . . . (4 plugs) LM
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** . . . . . . (5 or 6 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** . . . . (plug) LM
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual . . 80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 3½ pints; 4-speed, 4 pints
DRAIN and REFILL Not recommended

36 **Universal Joints** (plug) . . . . UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL . . . . 90 HP*

Below -25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints; with 289-cu. in., 271-hp engine, 5 pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK . . . . Gallons

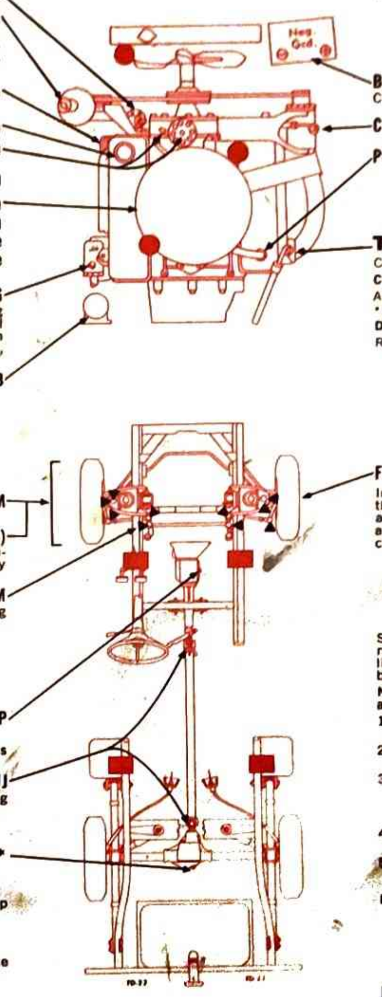
All 16

TIRES

Pressure	Front	Rear
6.50-13, 7.00-13	24*	24*
6.50-14, 6.95-14	24*	24*

* For better gas economy, high-speed driving or heavy loading, add 4 to 6 pounds

C Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE . . . . "MS" MO

Above -10° 10W-30
Below -10° 5W-20
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery . . . . Check and fill
Check level monthly

Crankcase Dipstick . . . . Check level

PCV System . . . . Service
Valve Early models . . . . Clean ★
Late models, jiggle-pin type . . . . Replace 12
All parts . . . . Clean 12

TRANSMISSION, Automatic . . FA

Check level, fluid warm, engine idling, in PARK ★

CAPACITY, quarts	Initial Refill	Total Refill
All	4	8½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings . . . . Repack WB 30
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: If equipped, front disc brakes require no adjustment.

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
30 Every 30,000 miles
36 Every 36,000 miles or 36 months
C Conditional service
Lubricate distributor shaft and wick at time of tune-up
Check steering gear periodically and add lubricant as required
Inspect steering linkage periodically
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A; with 289-cu. in., 271-hp engine, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD THUNDERBIRD V-8

1961-62 All Models

1961

1962

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	29NF 27F	65 70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	180*

* Permissible variation is plus or minus 20 psi

SPARK PLUGS

Autolite: 390 Super eng. BF32; others BF42
Gap: 390 Super eng. .025"; others .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

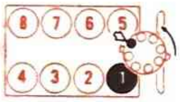
IGNITION POINTS

FoMoCo
Gap: .014"-.016"
Dwell angle: 26°-28½°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

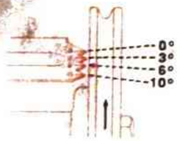


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1961: 6° (Allowable range, 2°-11°)
1962: 390 eng. 8° (Minimum allowable, 2°)
390 Super eng. 6° (Minimum allowable, 2°)

FUEL PUMP

AC model 5593450
Pressure: 4-6 lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
FORD 4-bbl.	1-1½	2 lean
HOLLEY 2-bbl. (Primary)	1-1½	index
(Secondary)	¾-1¼	—

ENGINE IDLE SPEED

1961 450-475 rpm in DRIVE
1962 475-500 rpm in DRIVE

VALVE CLEARANCES

(engine hot and running)
390 Super eng. Intake .025"; exhaust .025"
390 eng. Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	20	19

Cooling system pressure, 12-15 pounds

Distributor Shaft (oil cup). . Sparingly 10W **MO**
12 1961
C 1962
12 Wick under rotor...... Sparingly 10W **MO**

★ **Power Steering Reservoir**................ **FA**
Fill to "F" mark on gage
With air conditioning, reservoir on left fender apron, fill to ¾ to 1 inch from top

★ **Oil Filter** (under car)............... Replace
Add extra quart oil

Crankcase Dipstick............. Check level

Fuel Filter .... Replace
Replace initially at 4,000 miles
8 1961, right side under air cleaner
30 1962

★ **Brake Master Cylinder** (cap)............. **HB**
Fill to ⅜ inch below top of cylinder

★ **Front Suspension and Steering Linkage**.........(12 fittings) **CL**

24 **Universal Joint Spline** 1961..... Coat 1 oz. **SS**

★ **Universal Joints** .... **UJ**
Use low pressure. Relubricate using special adapter

24 **Rear Spring Inserts**................ Replace

DIFFERENTIAL .... 90 HP*

Below -25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Letter with axle number on patent plate on driver's door pillar

GAS TANK .... Gallons

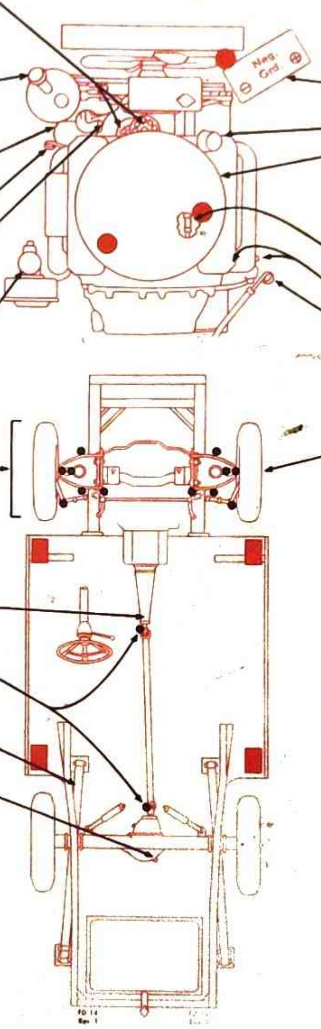
All models 20

TIRES

Pressure	Front	Rear
8.00-14	24*	24*

* For extensive high-speed driving and heavy loading, add 4 pounds

Rotate tires, Method A, then balance wheels
8 1961 **6** 1962
More often under severe road conditions and heavy loads



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE .... "MS" MO

Above —10° 10W-30
Below —10° 5W-20
CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.................... Check and fill
Check level monthly

Oil Fill Cap.......................... Wash ★

Air Cleaner Element................... Service
Dry type .... Clean ★
Dry type .... Replace
1961 .... **24**
1962 .... **30**

PCV System Valve.................. Clean ★
Disassemble and clean all parts; also, exhaust line

Manifold Heat Control Valve Shaft 1961.... **MH** ★

TRANSMISSION, Automatic . . FA

Check level, fluid warm, engine idling, in PARK . . ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL Not recommended
Remove 2 converter plugs and disconnect fill pipe

Front Wheel Bearings............ Repack **WB**
Repack on mileage basis only
1961 .... **12**
1962 .... **30**
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together one castellation and install cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Turn star wheel adjuster until shoes contact drum lightly
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjustment ¾ turn with finger pressure only. If adjustment screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1961, Every 4,000 miles or 4 months
1962, Every 6,000 miles or 6 months
6 Every 6,000 miles or 6 months
8 Every 8,000 miles or 8 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
30 Every 30,000 miles or 2 years
C Conditional service
Lubricate distributor shaft at time of tune-up

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M2C50-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SS	Special Purpose Lubricant Specification No. M1C-39
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

1963
1964
1965

FORD THUNDERBIRD V-8

1963-65 All Models

HOOD RELEASE: Outside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1963-64	29NF	65
1963: Optional	27F	70
1964: Optional	27F	80
1965	24F	55
Optional	27HF	80

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
1963: Early models	180
Late models	190
1964-65	170-210

Permissible variation is plus or minus 20 psi

SPARK PLUGS

Autolite: 390 Super eng. BF32; others BF42
Gap: 390 Super eng. .025"; others, .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket on tapered seat plugs

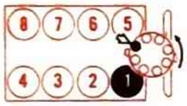
IGNITION POINTS

FoMoCo
Gap: .014"-.016"
Dwell angle: 26°-28½°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

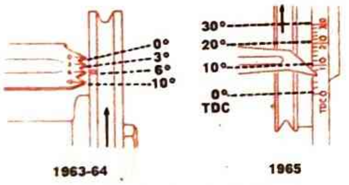


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1963: 6° (Allowable range, 2°-11°)
1964-65: 6°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1963, 4-6 lb.; 1964, 4.5-6.5 lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
FORD		
4-bbl. 1963	1-1½	2 lean
4-bbl. 1964	1½	1 lean
1965	1½	index
HOLLEY		
2-bbl. (Primary)	1-1½	index
(Secondary)	¾-1¼	—

ENGINE IDLE SPEED

390 Super eng. 675-700 rpm; others, 475-500 rpm*; in DRIVE

With air conditioning, as listed but with unit turned ON and in operation for 20 minutes

* 1965, Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek Chart

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	20	19

Cooling system pressure, 12-15 pounds

C **Distributor Shaft** (oil cup)..Sparingly 10W **MO**
1965, no oil cup

C Wick under rotor......Sparingly 10W **MO**

★ **Power Steering Reservoir**..........**FA**
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube
1963-64 with air conditioning, reservoir on left fender apron, fill to ¾ to 1 inch from top

36 **Power Steering Filter**..........Replace
1963-64 only. Inside reservoir

★ **Oil Filter** (under car)..........Replace
Add extra quart oil

Crankcase Dipstick..........Check level

36 **Fuel Filter** (under car)..........Replace

★ **Brake Master Cylinder** (cap)..........**HB**
Fill to ⅜ inch below top of cylinder

100 **Front Suspension**..........(4 plugs) **LM**
Lubricate using special adapter. Reinstall plug

C **Steering Linkage**..........(4 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

100 **Universal Joints**
1963-64 (plug)..........**UJ**
Lubricate using special adapter. Reinstall plug
1965..........Repack **UJ**

D[illegible]FERENTIAL..........90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK

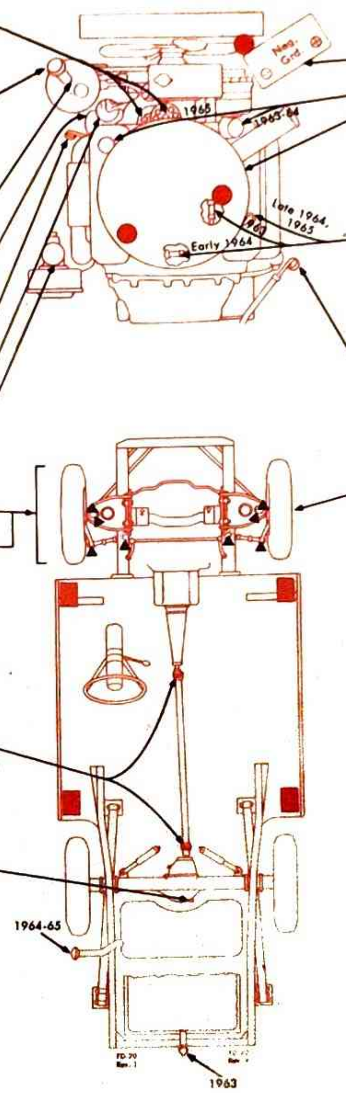
	Gallons
1963	20
1964-65	21½

TIRES

Pressure	Front	Rear
8.00-14, 8.15-15	24*	24*

* For better gas economy, high-speed driving or heavy loading, add 4 pounds

C Rotate tires, Method A, then balance wheels



CRANKCASE

	"MS" MO
Above –10°	10W-30
Below –10°	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery..........Check and fill
Check level monthly

Oil Fill Cap..........Wash ★

Air Cleaner Element..........Service
Dry type..........Clean ★
Dry type..........Replace
1963 **30** 1964-65 **36**
Polyurethane..........Replace **12**
1964-65 models with closed PCV system

PCV System..........Service
Valve 1963, early 1964..........Clean ★
Others, jiggle-pin type..........Replace **12**
All parts..........Clean **12**

TRANSMISSION, Automatic FA

Check level, fluid warm, engine idling, in PARK.. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL Not recommended
Remove 2 converter plugs and disconnect fill pipe

Front Wheel Bearings..........Repack **WB**
Repack on mileage basis only
1963 **24** 1964-65 **30**

Initial torque, 17-25 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: 1965 front disc brakes require no adjustment

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,00[illegible]r 12 months
24 Every 24,0[illegible]
30 Every 30,000 miles or [illegible] years
36 Every 36,000 miles or 36 months
100 Every 100,000 miles or 36 months
C Conditional service
Lubricate distributor shaft and wick under rotor at time of tune-up
Inspect steering linkage periodically
Rotate tires and balance wheels as required

🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

FA Ford Automatic Transmission Fluid
Specification No. M2C33-D

HB Hydraulic Brake Fluid, Heavy-Duty
SAE 70R3

HP* Hypoid Gear Lubricant
Specification No. ESW-M-2C57-A

LM Lithium Grease, with Moly
Specification No. ESA-M-1C47-A or ESA-M-1C75-A

MO Motor Oil

UJ Universal Joint Grease
Specification No. ESA-M-1C57-A

WB Wheel Bearing Grease
Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

IMPERIAL

1962-63 All Models

1962

1963

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
All	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	130	165*

* Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion J-12Y
Gap: .035"
Torque: 30 ft. lb.

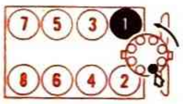
IGNITION POINTS

Chrysler
Gap: .014"-.019"
Dwell angle: 1962, 27°-32°; 1963, 28°-33°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

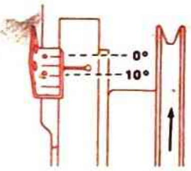


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect vacuum line at distributor
5. Set idle speed to 500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 10°

FUEL PUMP

Carter model M-2769S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart in 60 seconds at 500 rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
4-bbl. AFB-3251S	1-2	2 rich
4-bbl. AFB-3256S	1-2	2 rich

ENGINE IDLE SPEED

500 rpm in NEUTRAL with headlights on high beam

Air Cond. 500 rpm in DRIVE with unit turned ON with headlights on high beam

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Oil Filter** (under car)................Replace
Add extra quart oil

OC **Battery**........................Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir**................PS
Fill to base of filler neck when cold, halfway when hot

Crankcase Dipstick.............Check level

Oil Fill Cap.............Wash and oil 30 **MO**
OC 1963 8 1962

32 **Automatic Trans. Filter** (under car).....Replace
Replace at time of transmission drain

Air Cleaner Element................Service
8 Dry type ....Clean
32 Dry type ....Replace

TY **Carburetor Choke Piston**...............CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Brake Master Cylinder** (cover).............HB
Fill to ¼ inch below top of reservoir

PCV System Valve.....................CC
Remove and clean valve; also hose and carburetor, if passages are clogged
TY 1963 8 1962
Service more frequently under severe service

8 **Crankcase Breather Outlet Element** 1962.....Wash and oil 30 **MO**

★ **Front Suspension**...............(4 plugs) **BJ**
Inspect seal, if damaged, replacement is necessary. After replacing seal or when relubricating, remove plug, use special gun or proper adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage**..........(4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

Universal Joint Spline..................**MP**
Above −10°, 90; below −10°, 80
Disassemble, fill half-full
1963, lubricate spline when repacking joints
32 1962

Universal Joints.................Grade 0 **UJ**
TY 1963 ....Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL...............MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963
32 1962

SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK ....Gallons

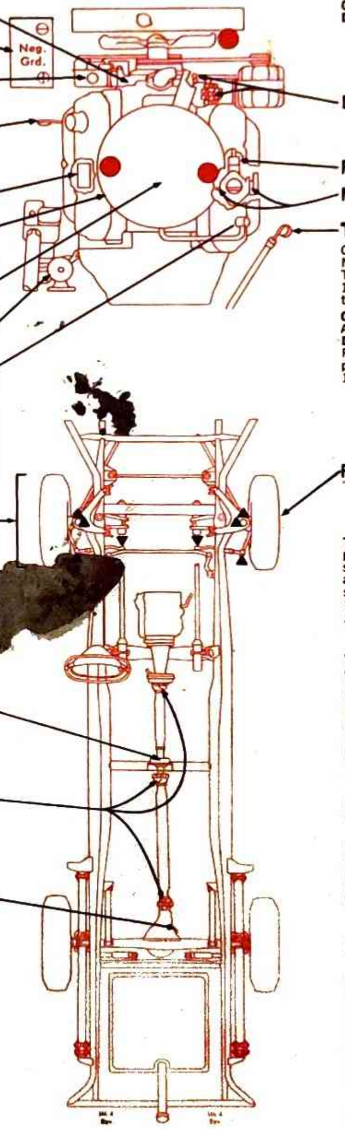
All models 23

TIRES

TIRES ....Pressure	Front	Rear
8.20-15	24	24

Rotate tires, Method A, then balance wheels
5 1963 8 1962

Chek-Chart



▲ Prepacked bearing

● Cooling system drain

CRANKCASE

CRANKCASE		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Distributor Shaft (oil cup)..............MO ★
Wick under rotor...........Sparingly MO
1962 12 1963 TY

Fuel Filter ....Replace 16

Manifold Heat Control Valve Shaft.........MH ★

TRANSMISSION, Automatic ..AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings...................WB
Inspect 16
1963, clean and repack.................. C
1962, clean and repack.................. 32

Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 1", engine running, the need for service is indicated

Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in reverse direction

1962: Adjust the brakes as follows:
1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

1963: Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

★ **1963, Twice yearly**
1962, Every 4,000 miles
5 **Every 5,000 miles**
8 **Every 8,000 miles**
12 **Every 12,000 miles**
16 **Every 16,000 miles**
32 **Every 32,000 miles**
OC **Every crankcase oil change**
TY **Twice yearly**
C **Conditional service**
1963, drain and refill differential for below −10° requirements
1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

1964

1965

IMPERIAL

1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	130	165*

* Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion: 1964 J-12Y, 1965 J-14Y or Mopar P-3-6P
Gap: .035"
Torque: 30 ft. lb.

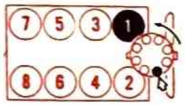
IGNITION POINTS

Chrysler
Gap: .014"-.019"
Dwell angle: 1964 28°-33°; 1965 28°-32°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

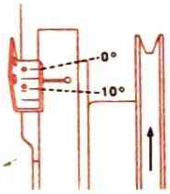


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect vacuum line at distributor
5. Set idle speed to 500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten clamp screw, recheck timing
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 10°

FUEL PUMP

Carter model M-3672S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart in 60 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
CARTER 4-bbl. AFB	1-2	2 rich

ENGINE IDLE SPEED

500 rpm in NEUTRAL with headlights on high beam
Air Cond. 500 rpm in DRIVE with unit turned ON with headlights on high beam

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

OC **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

Crankcase Dipstick .... Check level

★ **Oil Fill Cap** .... Wash and oil 30 **MO**
Service more frequently under dusty conditions

★ **Carburetor Choke Shaft** .... Clean **CC**

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system, clean element at each crankcase oil change; replace yearly

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **PCV System Valve** .... Check
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

Front Suspension and Steering Linkage .... (8 plugs) **BJ**
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

Universal Joint .... Grade 0 **UJ**
★ Inspect for leaks, replace seal if necessary
Severe service, inspect every 2 months or 4,000 miles
32 Repack if used under severe service

C **Universal Joint Spline** .... Grade 0 **LM**
Disassemble, fill half-full

Universal Joints
Early 1964 .... Grade 0 **UJ**
Late 1964, 1965, Constant Velocity Joints and Centering Yokes .. Grade 2 **LM**
★ Inspect for leaks, replace seals as required
Severe service, every 2 months or 4,000 miles
32 Repack if used under severe service

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check level every 2 months or 4,000 miles

CAPACITY 4 pints

DRAIN and REFILL
C Normal service **32** Severe service

SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

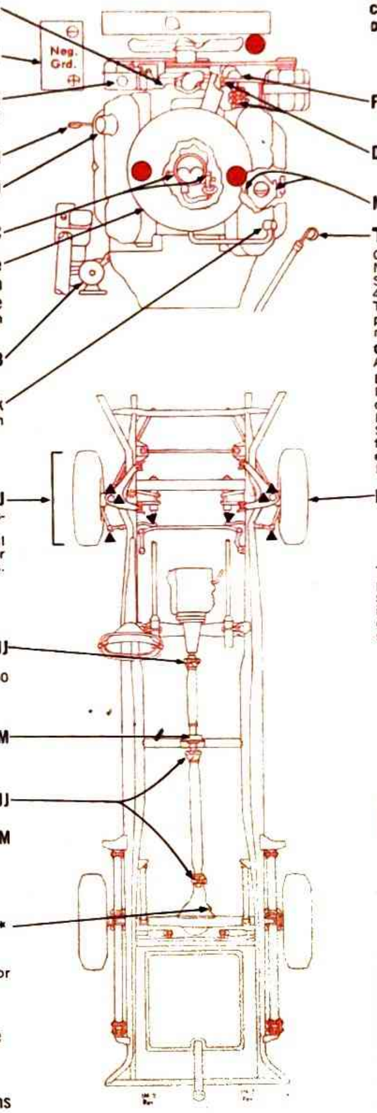
All models	23

TIRES

Pressure	Front	Rear
8.20-15	24	24
9.15-15	22*	22*

* Convertible, 24 pounds

5 Rotate tires, Method A, then balance wheels



▲ Prepacked bearing

● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 5 quarts

DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter .... Replace
1964 **16** 1965 **20**

Distributor Shaft (oil cup) .... **MO** **★**
Wick under rotor .... Sparingly **MO** **★**

Manifold Heat Control Valve Shaft .... **MH** **★**

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... **★**
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... Grade 2 **WB, LM**
Inspect **20**
Severe service, inspect every 10,000 miles
Repack .... **C**

Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- **★ Twice yearly**
- **5 Every 5,000 miles**
- **16 Every 16,000 miles or yearly**
- **20 Every 20,000 miles or 2 years**
- **32 Every 32,000 miles**
- **OC Every other crankcase oil change**
- **2Y Every 2 years or 32,000 miles**
- **C Conditional service**
  - Lubricate universal joint spline when repacking joints
  - Drain and refill differential for below −10° requirements
  - Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid. MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

'Jeep' UNIVERSAL 4

1945-65 All Models

1945-54

1955-65

HOOD RELEASE: Both sides

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1945-57	1 (6-volt)	100
1958 early	1 (6-volt)	105
1958 late, 1959-65	24H	50

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
L-head	90-110
F-head	120-130

Variations should not exceed 10 psi

SPARK PLUGS

Autolite A7; Champion J-8
Gap: .030"
Torque: 25-33 ft. lb.

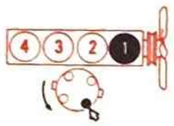
IGNITION POINTS

Autolite
Gap: .020"
Dwell angle: 42°

CONDENSER

Autolite
Capacity: CJ-2A, -3A, .18-.26 mfd
CJ-3B, -5, -6, .25-.28 mfd

Cylinder Numbering Sequence

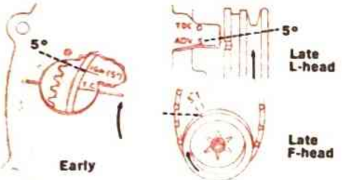


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at flywheel or crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
5° (On crankshaft damper or IGN mark on flywheel)

FUEL PUMP

AC mechanical, various models
Pressure: CJ-2A, 4½ lb. at 1800 rpm
CJ--3A, -3B, -5, -6, 2½-3¾ lb. at 1800 rpm
Volume: 1 pint in 30 seconds or less at idle speed

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)
1-bbl. WO	1¼
1-bbl. YF	¾-1¾

ENGINE IDLE SPEED

600 rpm

VALVE CLEARANCES

(engine cold)
L-head: Intake .016"; exhaust .016"
F-head: Intake .018", exhaust .016"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	12	11

Cooling system pressure, 7 pounds

Governor .... Crankcase grade **MO**
★ With level plug, fill to plug hole
Without level plug, fill with 2 ounces
2 DRAIN and REFILL

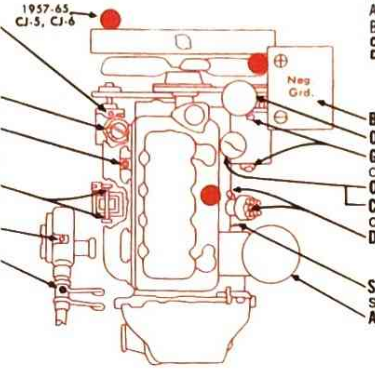
TY **Fuel Filter** .... Clean screen

6 **PCV System Valve** .... **CC**
Remove, clean valve and hose
1965 and late 1964, right side at intake manifold

★ **Manifold Heat Control Valve Shaft** .... **PO**
L-head engine

★ **Steering Gear** (plug) .... 80 **MP**

★ **Remote Control Gearshift** .... **CL**
Some early models



CRANKCASE .... "MM" MO

Severe driving, "MS"

	"MM"	"MS"
Above +32°	30	10W-30
Above +10°	20,20W	10W-30,10W-20
Above −10°	10W	10W-30,10W-20
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Oil Filter .... Replace, add extra quart oil **6**
Generator Some models (2 oil cups) .... **MO** ★
Crankcase grade. Lubricate sparingly
Oil Fill Cap
Crankcase Dipstick .... Check level
Combined with oil fill cap
Distributor Shaft (oil cup). Crankcase grade **MO** ★
Wick under rotor..... Crankcase grade **MO** ★
Lubricate shaft and wick sparingly
Starter (covered oil hole) .... **MO** ★
Some 1950 and earlier
Air Cleaner Element .... Service
Oil bath .... Wash and fill **MO** **2**
Above +32°, 40; below +32°, 30

★ **Front Suspension and Steering Linkage** ...... (7 to 13 fittings) **CL**

★ **Brake Master Cylinder** (cap) (thru floor) ..... **HB**
Fill to ½ inch below top of fill hole

★ **Clutch and Brake Pedals** .... **CL**

TRANSMISSION and TRANSFER CASE .... MP

Above +32°, 90; below +32°, 80
★ Maintain level to fill plug hole
Transmission, some models, plug on right side
CAPACITY Transmission: 3-speed 3 pints; 4-speed 6¾ pints. Transfer Case, 3½ pints
12 DRAIN and REFILL
Transfer Case, drain and fill thru separate plug holes

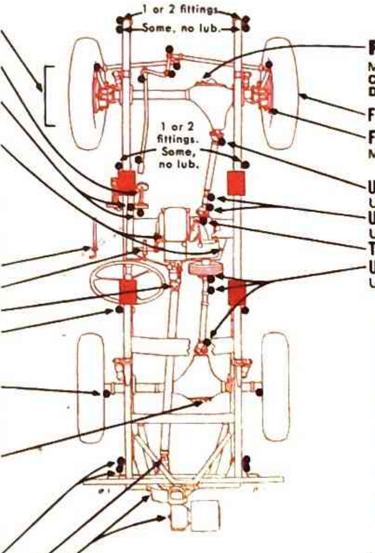
12 **Hand Brake Cable** .... Coat **GG**
12 **Speedometer Cable** .... Coat **GG**
C **Power Take-Off Universal Joint** ..... Repack **UJ**
★ **Spring Bolts** .... **CL**
Some, no lubrication

Rear Wheel Bearings
★ Fittings .... **WB**
Apply sparingly until lubricant appears at vent hole above fitting
6 Without fittings .... Repack **WB**

REAR DIFFERENTIAL .... 80 MP*

★ Maintain level to fill plug hole
CAPACITY 2½ pints
12 DRAIN and REFILL
POWR-LOK IDENTIFICATION (Front and Rear): Metal tag attached to housing stamped with letter "T" or "Use Limited-Slip Diff. Lube only"

★ **Spring Shackles** .... **CL**
Some, no lubrication
C **Power Take-Off Universal Joint** ..... Repack **UJ**
Power Take-Off and Belt Pulley Housing .. 80 **MP**
★ Fill each unit to plug level
3H Drain and refill thru separate plug holes



FRONT DIFFERENTIAL ..... 80 MP*

Maintain level to fill plug hole .... ★
CAPACITY 2½ pints
DRAIN and REFILL **12**

Front Wheel Bearings .... Repack **WB** **6**
Front Axle Universal Joints (plug) .... **UJ**
Maintain level to fill plug hole .... ★
Repack .... **UJ** **12**
Universal Joint .... **UJ** ★
Use low pressure
Universal and Slip Joints .... **UJ** ★
Use low pressure
Transfer Case Lever Shaft .... **CL** ★
Universals and Slip Joints .... **UJ** ★
Use low pressure

GAS TANK .... Gallons

All models 10½

TIRES

Pressure	Front	Rear
6.00-16	26	28
7.00-15	20	24
7.60-15	27	27
6.50-16, 7.00-15, 6 ply	27	27
6.70-15, 6 ply	24	32
7.00-16, 6 ply	30	45
9.00-13	25	25

TY Rotate tires, Method B, then balance wheels

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two adjustment cams are provided on each backing plate

Adjust the brakes as follows:

1. Turn adjustment cam until drum cannot be turned by hand
2. Back off adjustment cam until drum just turns freely without drag
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 1,000 miles**
Field work: Daily
2 **Every 2,000 miles**
Field or industrial work: Every 50 hours
6 **Every 6,000 miles**
Field or industrial work: Every 300 hours, except replace oil filter every 150 hours
12 **Every 12,000 miles or yearly**
Field or industrial work: Every 300 hours
TY **Twice yearly**
3H **Every 300 hours**
C **Conditional service**
Repack power take-off universal joints once a year, if belt pulley is used frequently for continuous operation

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CC Carburetor Cleaner
CL Chassis Lubricant
GG Graphite Grease
HB Hydraulic Brake Fluid, Heavy-Duty
MO Motor Oil
MP* Multi-Purpose Gear Lubricant
Differentials: MIL-L-2105B
PO Penetrating Oil
UJ Universal Joint Grease
WB Wheel Bearing Grease

* For Powr-Lok differential, use Multi-Purpose Gear Lubricant, 'Jeep' Part No. 94557

HOOD RELEASE: Front

'Jeep' WAGONEER 6

1963-65 Series J-100
Station Wagon, Panel Delivery

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H	50, 60, 70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 145-155
Variations should not exceed 15 psi

SPARK PLUGS

Champion L-12Y
Gap: .030"
Torque: 28-30 ft. lb.

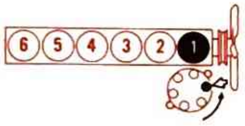
IGNITION POINTS

Autolite
Gap: .020"
Dwell angle: 38°

CONDENSER

Autolite
Capacity: .25-.28 mfd

Cylinder Numbering Sequence

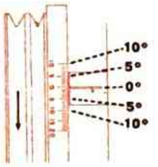


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line at carburetor and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 5°

FUEL PUMP

Carter model M-3561S
Pressure: 3½-5½ lb. at 1800 rpm
Volume: 1 pint in 30 seconds or less at idle speed

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl.	½	index	index
2-bbl.	½	index	index

ENGINE IDLE SPEED

590-600 rpm

VALVE CLEARANCES

(engine cold, not running)
Intake .008"; exhaust .008"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	12	11

Cooling system pressure, 13 pounds

★ **Oil Filter** .... Replace, add extra quart oil

★ **Power Steering Reservoir** .... AF
Fill to base of filler neck

★ **PCV System Valve** CC
Remove and clean valve and hose

Crankcase Dipstick .... Check level

Air Cleaner Element .... Service
★ Oil bath .... Wash and fill MO
Above +32°, 40; below +32°, 30
★ Dry type ...... Wash in water and detergent
30 Dry type .... Replace

★ **Steering Gear** (plug) .... 80 MP

★ **Brake and Clutch Fluid Reservoirs** (plug or cap) .... HB
Fill to ½ inch below top of fill hole

C **Remote Control Gearshift** CL

30 **Steering Bell Crank** .... (fitting) CL

30 **Independent Suspension Center Univ. Joint** . . UJ
4WD models only. Loosen inner end of boot and pull back to reach fitting. Reassemble boot

★ **King Pins** .... (4 fittings) CL
2WD solid front axle models only

30 **Front Suspension Ball Joints** . . . . (2 fittings) BJ
Independent front suspension models only

30 **Steering Linkage** .... (6 or 7 fittings) LL

12 **Transmission Overdrive Cable** .... Coat GG
Remove cable from conduit. On some 2WD models

12 **Speedometer Cable** .... Coat GG
Remove cable from conduit

TRANSMISSION and TRANSFER CASE .... MP

Above +32°, 90; below +32°, 80
★ Maintain level to fill plug hole; 2WD models, right side
CAPACITY 2WD models, 2¾ pints, with overdrive, 3 pints; 4WD models, 2½ pints. Transfer case, 3¼ pints
30 DRAIN and REFILL
Transfer case and overdrive, drain and fill thru separate plug holes. Fill overdrive first, then transmission. 2WD models, without overdrive, add ½ pint thru plug hole in extension housing

30 **Rear Wheel Bearings** .... WB
Apply sparingly until lubricant appears at vent hole above fitting

REAR DIFFERENTIAL . . . . 80 MP*

★ Maintain level to fill plug hole
CAPACITY 3 pints
30 DRAIN and REFILL
POWR-LOK IDENTIFICATION:
Metal tag attached to rear cover stamped with "Use Limited-Slip Diff. Lube only"

GAS TANK .... Gallons

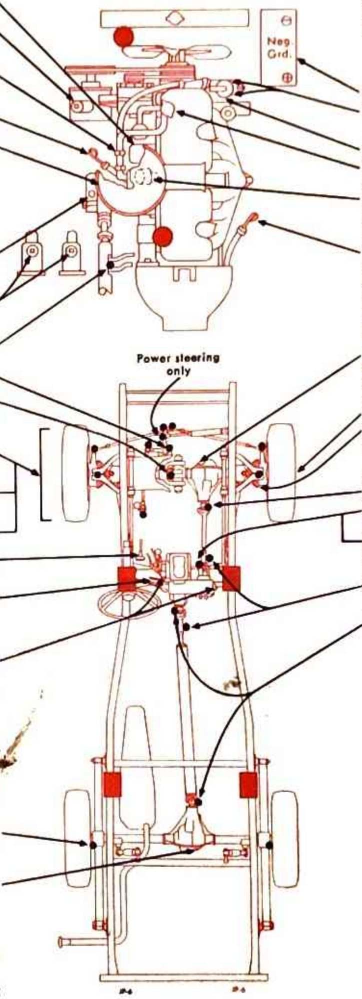
All models 20

TIRES

Pressure	Front	Rear
6.70-15	27*	27*
7.00-15	27	27
7.10-15	26*	26*
7.60-15	27	27
9.00-13	25	25

* Captive-Air: Outer chamber pressure, 24; inner chamber pressure, 28. If vehicle is loaded to maximum capacity, tires should be inflated, outer, 30; inner, 34

★ Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C



▬ Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE .... "MM" MO

Severe operation, "MS"		
Above +32°	30	10W-30
Above +10°	20,20W	10W-30,10W-20
Above −10°	10W	10W-30,10W-20
Below −10°	5W	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Distributor Reservoir (plug) .... LM 30
Wick under rotor .... Sparingly MO C
Fuel Filter .... Clean screen TY
Oil Fill Cap Screen .... Wash ★
Inside valve cover, below fill cap
Crankcase Breather .... Wash and oil MO ★
Clean screen inside breather pipe
1965 and late 1964, sealed, no service

TRANSMISSION, Automatic . . AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	8½

DRAIN and REFILL 30
Remove 1 converter plug and disconnect fill pipe

FRONT DIFFERENTIAL . . 80 MP*

On 4WD models. Maintain level to fill plug hole . . ★
CAPACITY 2½ pints
DRAIN and REFILL 30
Front Wheel Bearings .... Repack CL 30
Front Axle Universal Joints (plug) CL
Maintain level to fill plug hole .... ★
Repack .... CL 30
Not on 2WD solid front axle models
Universal Joint .... Use low pressure UJ 30
Universal Joint .... Use low pressure UJ 30
Double Cardan joint on some 4WD models, 2 fittings
Centering Section Cavity .... EP No. 1 LM 30
On models with Double Cardan joint. Depressed-type fitting; use special adapter
Universal Joint Splines .... Repack CL C
Some early 1963 models (fittings) ...... CL 30
Universal Joints .... Use low pressure UJ 30

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two adjustment cams are provided on each backing plate

Adjust the brakes as follows:

1. Turn adjustment cam until drum cannot be turned by hand
2. Back off adjustment cam until drum just turns freely without drag
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

For off-highway operation, reduce all lubrication and service intervals in accordance with severity of operation and amount of mud, water and dust encountered. Under extremely dusty conditions, service air cleaners daily

★ Every 6,000 miles
12 Every 12,000 miles
30 Every 30,000 miles
TY Twice yearly
C Conditional service
Lubricate remote control gearshift when hard to shift
Lubricate distributor wick under rotor when breaker points are replaced
Disassemble and repack universal joint splines when "spline grunt" is evident

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant 'Jeep' Part No. 934570
CL	Chassis Lubricant Front Axle Universal Joints and Wheel Bearings: MIL-G-10924 Universal Joint Splines: 'Jeep' Part No. 934190
CC	Carburetor Cleaner
GG	Graphite Grease
HB	Hydraulic Brake Fluid, Heavy-Duty
LL	Steering Linkage Lubricant 'Jeep' Part No. 934571
LM	Lithium Grease
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Differentials: MIL-L-2105B
UJ	Universal Joint Grease 'Jeep' Part No. 934188
WB	Wheel Bearing Grease

* For Powr-Lok differential, use Multi-Purpose Gear Lubricant, 'Jeep' Part No. 94557

LINCOLN CONTINENTAL

1961-65 All Models

1961
1962
1963
1964
1965

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	27F, 27HF	80

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
All	160-200

Max. variation: 1961-63, 10 psi; 1964-65, 20 psi

SPARK PLUGS

Autolite BF42
Gap: .032"-.036"
Torque: 1961-63, 20 ft. lb.; 1964-65, 15-20 ft. lb.
Do not use gasket on tapered seat plugs

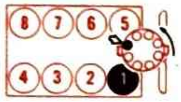
IGNITION POINTS

FoMoCo
Gap: 1961-63, .014"-.016"; 1964, .014"-.018"; 1965, .014"-.016"
Dwell angle: 26°-28½°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

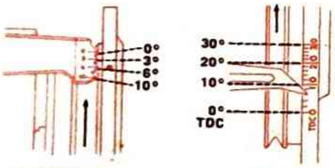


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1961-63 1964-65

Timing Setting (Before Top Dead Center):
1961, 6° (Allowable range, 2°-10°)
1962, 8° (Allowable range, 2°-13°)
1963, 4° (Allowable range, 2°-4°)
1964-65, 6°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 4½-6½ lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
2-bbl. ABD	1-1½	index*
4-bbl.	1½	1 rich

* 1962-63, 1 rich

ENGINE IDLE SPEED

450-475 rpm* in DRIVE

Air Cond.: 1961, early 1962, set idle to 450-475 rpm in DRIVE with unit turned OFF, then set idle to 900 rpm with idle compensator held ON

Late 1962-65*, set idle to 450-475 rpm in DRIVE with unit turned ON and in operation for 20 minutes

On cars equipped with vacuum release parking brake, remove vacuum line from power unit of parking brake assembly and plug line to keep parking brake engaged

* 1965, Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts With Heater
1961-62	25
1963-65	21

Cooling system pressure, 12-15 pounds

12 **Fuel Filter** .... Replace
Replace at first 6,000 miles

★ **Power Steering Reservoir** .... FA
Fill to "F" mark on dipstick

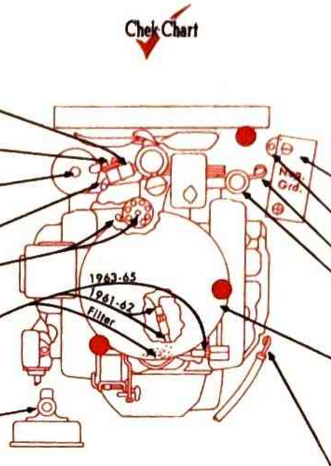
Power Steering Filter .... Replace
36 1963-65 24 1961-62

OC **Oil Filter** (under car) .... Replace

12 **Distributor Shaft** (oil cup) .. Sparingly 10W MO
1965, no oil cup
12 Wick under rotor ...... Sparingly 10W MO

PCV System .... Service
★ Valve 1961-63, early 1964 .... Clean
12 Others, jiggle-pin type .... Replace
12 All Parts, including filter .... Clean

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of cylinder



CRANKCASE

	"MS" MO
Above —10°	10W-30
Below —10°	5W-20

CAPACITY (includes oil filter) 6 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Automatic Transmission Filter .... Replace 12
On some 1961 models with external filter

Crankcase Dipstick .... Check level

Oil Fill Cap .... Service
Paper element type .... Replace 12
1961-63, early 1964 models
Gauze type .... Wash ★
Late 1964, 1965 models

Air Cleaner Element .... Service
Dry type .... Clean ★
Dry type .... Replace
1961-63 30 1964-65 36
Polyurethane .... Replace 12
1964-65 with closed PCV system

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10½

DRAIN and REFILL Not recommended
Remove 2 converter plugs. Early 1961, also remove transmission plug. All others, remove oil pan; first remove reinforcing cross member at rear of pan

Front Wheel Bearings .... Repack WB
Repack on mileage basis only
1961-62 24 1963-65 30
Initial torque, 17-25 ft. lb., while rotating wheel; then with lock-nut on spindle nut and castellation aligned with hole in spindle, back off both nuts together, one castellation and install cotter pin

Front Suspension and Steering Linkage .... (9 plugs) LM
Lubricate using special adapter. Reinstall plug
36 1964-65 30 1961-63

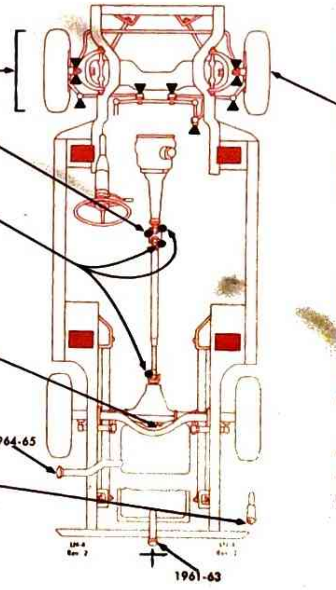
Centering Yoke Socket and Ball .... UJ
Special fitting; 1965, remove plug. Use special adapter
36 1964-65 30 1961-63

Universal Joints .... UJ
★ 1961-62 (fitting)
Use low pressure
30 1963 (plug)
36 1964 (plug)
36 1965 (Repack)

DIFFERENTIAL .... 90 HP*

★ Maintain level to fill plug hole
CAPACITY 4¾ pints
DRAIN and REFILL Not recommended
DIRECTED POWER IDENTIFICATION:
Metal tag attached to differential rear cover

C **Electric-Hydraulic Mechanism**
On convertibles. Located behind trim pad in luggage compartment. Loosen fill plug, run engine at fast idle, raise and lower top three times. With top down and deck lid open, fill to bottom of fill plug hole
1961-63 .... HB
1964-65 .... AF



GAS TANK

	Gallons
1961-63	21
1964-65	24

TIRES

Pressure	Front	Rear
9.00-14, 9.50-14, 9.15-15	24*	24*

* For considerable high-speed driving, heavy loads, or maximum fuel economy, add 4 pounds

C Rotate tires, Method A, then balance wheels

🟥 Position for lift adapter
▲ Prepacked bearing
• Lubrication fitting
● Cooling system drain

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: 1965 front disc brakes require no adjustment

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
30 Every 30,000 miles or 2 years
36 Every 36,000 miles or 3 years
OC Every crankcase oil change
C Conditional service
Check electric-hydraulic mechanism fluid level as required
Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
FA Ford Automatic Transmission Fluid
Specification No. M2C33-D
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP* Hypoid Gear Lubricant
Specification No. ESA-M-2C80-A
LM Lithium Grease, with Moly
Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO Motor Oil
UJ Universal Joint Grease
Specification No. ESA-M-1C75-A
WB Wheel Bearing Grease
Specification No. ESA-M-1C60-A

* Directed Power, use same lubricant as standard axle

MERCURY 6

1962-63 Meteor All Models

1962

1963

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22NF	40
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 150-190

Allowable tolerance between cylinders, 10 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 20 ft. lb.
Do not use gasket with tapered seat plugs

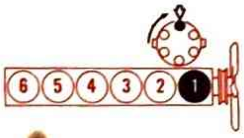
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

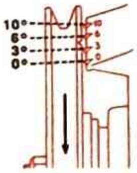


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1962: Manual Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 10° (Allowable range, 2°-15°)
1963: Manual Trans. 6° (Allowable range, 2°-11°)
Auto. Trans. 12° (Allowable range, 2°-17°)
200 eng. 10° (Allowable range 2°-15°)

FUEL PUMP

AC mechanical
Pressure: 3½-5½ lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD 1-bbl.	1-1½	index	index
HOLLEY 1-bbl.	1½	index	index

ENGINE IDLE SPEED

Manual Trans. 500-550 rpm*
Auto. Trans. 475-525 rpm** in DRIVE
With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes
* 1962: With smog reduction, 550-600 rpm
** 1962: With smog reduction, 525-575 rpm

VALVE CLEARANCES

(engine hot and running)

1962: Intake .016"; exhaust .016"
1963: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	9½	8½

Cooling system pressure, 12-15 pounds

★ **Power Steering Reservoir** ....FA
Fill to "F" mark on gage

36 **Power Steering Filter** ....Replace
1963 only. Inside reservoir

12 **PCV System** Early 1963 ....Clean
Clean tube and separator

★ **Oil Filter** ....Replace
Add extra quart oil

Distributor Shaft (fill oil cup)........10W MO
12 1962 C 1963

Crankcase Dipstick ....Check level

Fuel Filter ....Replace
30 1962 36 1963

12 **Steering Gear** (plug)...................SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap).............HB
Fill to ¼-½ inch below top of cylinder

Front Suspension..............(4 plugs) LM
Lubricate using special adapter. Reinstall plug
30 1962 36 1963

Steering Linkage...........(4 or 6 plugs) LM
30 1962 36 1963
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual ..80 EP

★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended

Universal Joints (plug)...................UJ
Lubricate using special adapter. Reinstall plug
30 1962 36 1963

DIFFERENTIAL ....90 HP

Below −25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended

GAS TANK ....Gallons

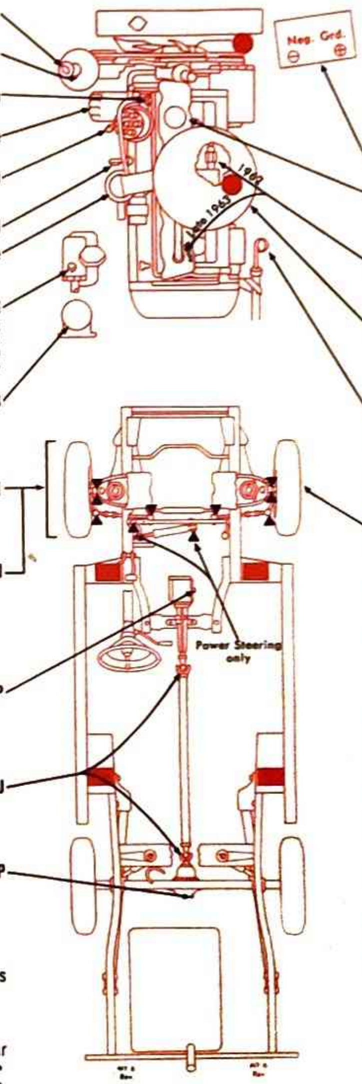
All models 16

TIRES

...........Pressure	Front	Rear
6.50-14	24*	24*
7.00-14	24*	24*
7.00-14 station wagon	24*	28*

* For considerable high-speed driving or heavy loads, add 4 to 6 pounds

Rotate tires, Method A, then balance wheels if required
12 1962 ★ 1963



CRANKCASE ...."MS" MO

Above −10°	10W-30
Below −10°	5W-20

CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.......................Test and fill ★

Oil Fill Cap........................Wash ★

PCV System Valve 1962, late 1963....Service
Valve ....Clean ★
All parts ....Clean 12

Air Cleaner Element.................Service
Dry type ....Clean ★
Dry type ....Replace
1962 30 1963 24

TRANSMISSION, Automatic..FA

Check level, fluid warm, engine idling, in PARK.. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings............Repack WB
Repack on mileage basis only
1962 30 1963 24

Initial torque, 12½ ft. lb.; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: If frame contact hoist is used, disconnect parking brake cable

1. Expand shoes until a slight drag is felt when turning drums
2. Remove brake drums
3. Hold adjusting lever away from adjusting screw, and back off the adjusting screw ¾ of a turn
4. Reinstall drums and wheels
5. Operate car in reverse and make 5 or 6 brake applications to bring the shoes into proper adjustment
6. Reconnect and adjust parking brake cable

Bleeding sequence: RR, LR, RF, LF

Power brakes: Master cylinder, RR, LR, RF, LF, master cylinder

🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

KEY TO INTERVALS

- ★ Every 6,000 miles or 6 months
- 12 Every 12,000 miles or 12 months
- 24 Every 24,000 miles or 2 years
- 30 Every 30,000 miles or 2 years
- 36 Every 36,000 miles or 3 years
- C Conditional service
  1963, lubricate distributor shaft at time of tune-up

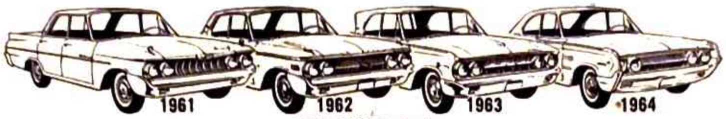
FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP	Hypoid Gear Lubricant Specification No. ESW-M2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

MERCURY V-8

1961 All Models; 1962-63 Monterey
1964 Monterey, Montclair, Parklane



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Manual Trans.	29NF	55
Auto. Trans.	29NF	65
	27F	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
292 engine 140-180
352, 390, 406, 427 engines..............160-200
1964 390 4-bbl. engine..................170-210
Max. variation: 1961-63, 10 psi; 1964, 20 psi

SPARK PLUGS

Autolite: 292 eng. BF82; 352, 390 engs. BF42; 390 Super and Police, 406, 427 engs. BF32
Gap: .032"-.036"
Torque: 1961-63, 20 ft. lb.; 1964, 15-20 ft. lb.

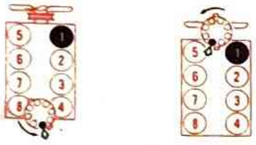
IGNITION POINTS

FoMoCo
Gap: Single points, .014"-.016"; dual points, each set, 1961-63, .018"-.022", 1964, .019"-.021"
Dwell angle: Single points, 26°-28½° except 1963 427 eng. 22°-24°; 1964 427 eng. dual points, total dwell, 33°-36°

CONDENSER

FoMoCo Capacity: .21-.25 mfd

Cylinder Numbering Sequence



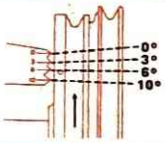
292 eng. 352, 390, 406, 427 engs.

Firing Order: 292 engine 1, 5, 4, 8, 6, 3, 7, 2
352, 390, 406, 427 engines 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

Follow procedure listed on Chart MY-10

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1961: Manual Trans. 3°; Auto. Trans. 292 eng. 10°; 352, 390 engines 6° (All, range, 2°-10°)
1962: Manual Trans. 5°; Auto. Trans. 292 eng. 12°; 352, 390 engs. 8°; 406 eng. 8° (Min. 2°)
1963: 390 eng. 6° (Allowable range, 2°-11°); 390 Super eng. Manual Trans. 5° (Allowable range, 2°-10°), Auto. Trans. 8° (Allowable range, 2°-11°); 406, 427 engs. 8° (Allowable range, 2°-8°)
1964: 390 2-bbl. eng. 6°*; 390 4-bbl. eng. Manual Trans. 4°*, Auto. Trans. 6°*; 427 eng. 8°**

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

** If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1961-63, 292, 352, 390 engs. 4-6 lb.; 406, 427 engs. 5½-6½ lb.; 1964, 390, 427 engs. 4½-6½ lb.; at idle rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD			
2-bbl.	1½	index	2 lean
4-bbl. 1961-63	1½	—	2 lean
1964 390 eng.	1-1½	1 rich*	1 rich*
HOLLEY			
2-bbl. (Primary)	1-1½	index	—
(Secondary)	¾-1¼	—	—
4-bbl.	1-1½	index	—

* 390 Police, 1 lean

ENGINE IDLE SPEED

Manual Trans.: 575-600 rpm*
Auto. Trans.: 1961-63, 450-475 rpm**; 1964, 475-500 rpm†; in DRIVE
With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes

* 1963, 406, 427 engs. 700 rpm; 1964, 427 eng. 700-800 rpm

** 390 eng. 475-500 rpm † 390 Police, 550-575 rpm

VALVE CLEARANCES

(engine cold, not running)
292 engine: Intake .019"; exhaust .019"
(engine hot and running)
390 Police, 406, 427 engines
Intake .025"; exhaust .025"
352, 390 engines: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM.........Quarts

	With Heater	Without Heater
All models	20	19

Cooling system pressure, 12-15 pounds

Fuel Filter ....Replace
8 1961 right side under air cleaner
Replace at first 4,000 miles
30 1962
36 1963-64
406-, 427-cu. in. engines, right side under air cleaner. Every 6,000 miles

★ **Power Steering Reservoir**................FA
Fill to "F" mark on gage

36 **Power Steering Filter**..............Replace
1963-64 only. Inside reservoir

★ **Oil Filter** (under car)..............Replace
Add extra quart oil. 292-cu. in. engine, rear

Crankcase Dipstick..............Check level
292-cu. in. engine, right side

12 **Fuel Pump Sediment Bowl & Screen** 1961. Clean

C **Steering Gear** (plug)...................SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap).............HB
Fill to ¼ inch below top of cylinder

Air Cleaner Element................Service
★ Dry type ....Clean
Dry type ....Replace
30 1961-63 36 1964
12 Polyurethane ....Replace
1964 models with closed PCV system

Front Suspension...........(4 or 6 plugs) LM
Lubricate using special adapter. Reinstall plug
30 1961-62 36 1963-64

Steering Linkage......(4, 5 or 6 plugs) LM
Lubricate using special adapter. Reinstall plug
30 1961-62 36 1963-64

TRANSMISSION, Manual..80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed 292-cu. in. engine, **3 pints**; with overdrive, 4¼ pints. 352-, 390-, 406-, 427-cu. in. engines, 3½ pints. 4-speed, Warner, 3½ pints; Ford, 4 pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

30 **Universal Joint Spline** 1961......Coat 1 oz. SS
On models with automatic transmission

Universal Joints (plug)...................UJ
Lubricate using special adapter. Reinstall plug
30 1961-62 36 1963-64

DIFFERENTIAL ....90 HP*

Below —25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 5 pt.; with 427-cu. in. eng., **5½ pt.**
DRAIN and REFILL Not recommended
POWER TRANSFER IDENTIFICATION:
Letter with axle number on patent plate on driver's door pillar

GAS TANK.................Gallons

1962-64 station wagon................	21
All other models......................	20

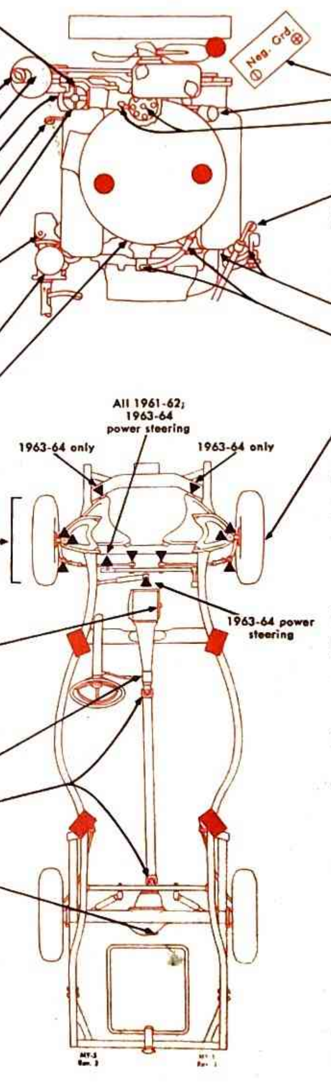
TIRES

Pressure	Front	Rear
6.70-15, 7.10-15	24*	24*
7.50-14, 8.00-14, 8.50-14..........	24*	24*
Station wagon: 8.00-14, 8.50-14....	24*†	28*†

* For highway driving, add 4 to 8 pounds

† 8-ply tires: Medium Load, front **26**, rear **32**; heavy load, front **28**, rear **36**

Rotate tires, Method A, then balance wheels if required
8 1961 12 1962 6 1963-64



CRANKCASE...............“MS” MO

Above —10°.........................10W-30
Below —10°.........................5W-20
CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.....................Test and fill ★
Oil Fill Cap...........................Wash 6
Distributor Shaft (oil cup)..Sparingly 10W MO
292-cu. in. engine, at rear
Wick under rotor......Sparingly 10W MO
Shaft and wick..1961-62 12 1963-64 C

TRANSMISSION, Automatic..FA

Check level, fluid warm, engine idling, in PARK.. ★

CAPACITY, quarts	Initial Refill	Total Refill
2-speed	5	9
3-speed, Multi-Drive..	5	10

DRAIN and REFILL Not recommended
Remove 2 converter plugs. 3-speed, also disconnect fill pipe; 2-speed, remove oil pan

Manifold Heat Control Valve Shaft.........MH ★
Not on 352-, 390-cu. in. engines

PCV System ....Service
Valve, except late 1964...........Clean ★
292-cu. in. engine, at front of carburetor
Late 1964, jiggle-pin type......Replace 12
All parts ....Clean 12
Including filter and tube

Front Wheel Bearings...........Repack WB
Repack on mileage basis only
1961, initial torque, 11½-12½ ft. lb.; final adjustment, loosen ⅙ but not more than ⅓ turn
1962, initial torque, 12½ ft. lb.; 1963-64, initial torque, 15-20 ft. lb.; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin
1961 12 1962 30 1963-64 24

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: If frame contact hoist is used, disconnect parking brake cable

1. Expand shoes until a slight drag is felt when turning drums
2. Remove brake drums
3. Hold adjusting lever away from adjusting screw, and back off the adjusting screw ¾ of a turn
4. Reinstall drums and wheels
5. Operate car in reverse and make 5 or 6 brake applications to bring the shoes into proper adjustment
6. Reconnect and adjust parking brake cable

Bleeding sequence: RR, LR, RF, LF

1962 Power brakes: Master cylinder, RR, LR, RF, LF, master cylinder

KEY TO INTERVALS

★ 1961, Every 4,000 miles or 4 months
1962-64, Every 6,000 miles or 6 months
6 Every 6,000 miles or 6 months
8 Every 8,000 miles or 8 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 24 months
30 Every 30,000 miles or 24 months
36 Every 36,000 miles or 36 months
C Conditional service
Check steering gear periodically and add lubricant as required
1963-64, lubricate distributor shaft and wick at time of tune-up

🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A; with 390-, 406-, 427-cu. in. engines, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SS	Special Purpose Lubricant Specification No. M1C-39
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Power Transfer, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

MERCURY V-8

1962-63 Meteor All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24F	55 65

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
All	130-170

Allowable tolerance between cylinders, 10 psi

SPARK PLUGS

Autolite BF42
Gap: .032"-.036"
Torque: 20 ft. lb.
Do not use gasket with tapered seat plugs

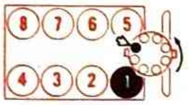
IGNITION POINTS

FoMoCo
Gap: .014"-.016"
Dwell angle: 26°-28½°

CONDENSER

FoMoCo
Capacity .21-.25 mfd

Cylinder Numbering Sequence

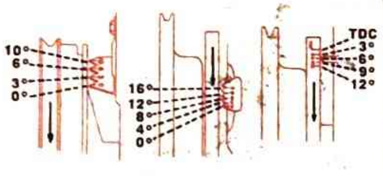


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor as necessary to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1962 Early 1963 Late 1963

Timing Setting (Before Top Dead Center):
1962: 221 eng. 4° (Allowable range, 2°-5°)
260 eng. 4° (Allowable range, 2°-6°)
1963: 221 engine
Man. Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 12° (Allowable range, 2°-17°)
260 engine
Man. Trans. 4° (Allowable range, 2°-9°)
Auto. Trans. 10° (Allowable range, 2°-15°)

FUEL PUMP

AC mechanical
Pressure: 4-6 lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD			
1962 2-bbl.	1½	2 lean	2 lean
1963 2-bbl.	1-1½	4 lean	4 lean

ENGINE IDLE SPEED

Manual Trans. 1962, 500-525 rpm*; 1963, 575-600 rpm
Auto. Trans. 475-500 rpm in DRIVE
With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes
* 1962: With smog reduction, 525-575 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	14½	13½

Cooling system pressure, 12-15 pounds

Fuel Filter .... Replace
30 1962 **36** 1963

★ **Power Steering Reservoir** .... FA
Fill to "F" mark on gage

36 **Power Steering Filter** .... Replace
1963 only. Inside reservoir

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

Distributor Shaft (fill oil cup) .... 10W **MO**
12 1962 **C** 1963
Wick under rotor ..... Sparingly 10W **MO**
12 1962 **C** 1963

Air Cleaner Element .... Service
★ Dry type .... Clean
30 Dry type .... Replace

12 **Steering Gear** (plug) .... **SG**
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... **HB**
Fill to ¼-½ inch below top of cylinder

Front Suspension .... (4 plugs) **LM**
Lubricate using special adapter. Reinstall plug
30 1962 **36** 1963

Steering Linkage .... (4 or 6 plugs) **LM**
30 1962 **36** 1963
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 3½ pints, with overdrive, 4 pints; 4-speed, 3½ pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

Universal Joints (plug) .... **UJ**
Lubricate using special adapter. Reinstall plug
30 1962 **36** 1963

DIFFERENTIAL .... 90 HP

Below —25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints
DRAIN and REFILL Not recommended

GAS TANK .... Gallons

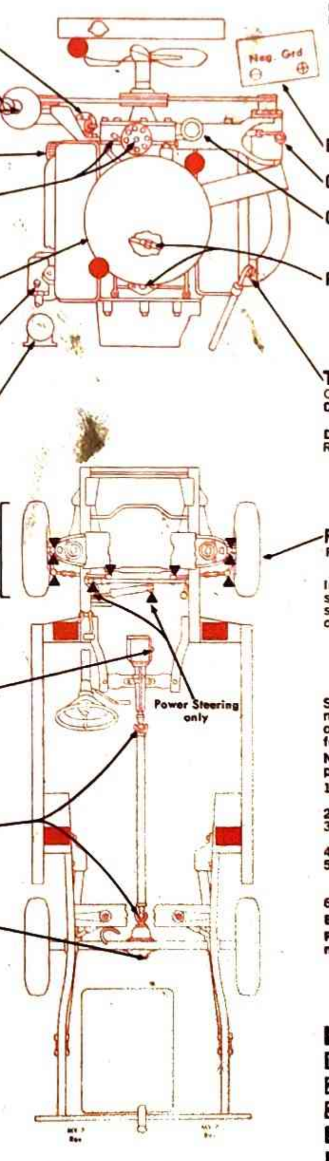
All models	16

TIRES

Pressure	Front	Rear
6.50-14	24*	24*
7.00-14	24*	24*
7.00-14 station wagon	24*	28*

* For considerable high-speed driving or heavy loads, add 4 to 6 pounds

Rotate tires, Method A, then balance wheels if required
12 1962 ★ 1963



■ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above —10°	10W-30
Below —10°	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Crankcase Dipstick .... Check level

Oil Fill Cap .... Wash ★

PCV System .... Service
Valve .... Clean ★
Filter .... Clean **12**
Also disassemble and clean all parts, including exhaust line

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8½

DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings .... Repack **WB**
Repack on mileage basis only
1962 **30** 1963 **24**
Initial torque, 12½ ft. lb.; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. No adjustment is normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

Note: If frame contact hoist is used, disconnect parking brake cable

1. Expand shoes until a slight drag is felt when turning drums
2. Remove brake drums
3. Hold adjusting lever away from adjusting screw, and back off adjusting screw ¼ turn
4. Reinstall drums and wheels
5. Operate car in reverse, make 5 or 6 brake applications to bring shoes into proper adjustment
6. Reconnect and adjust parking brake cable

Bleeding sequence: RR, LR, RF, LF

Power brakes: Master cylinder, RR, LR, RF, LF, master cylinder

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
30 Every 30,000 miles or 2 years
36 Every 36,000 miles or 3 years
C Conditional service
1963, lubricate distributor shaft at time of tune-up
1963, lubricate distributor wick under rotor at time of tune-up

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP	Hypoid Gear Lubricant Specification No. ESW-M2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

MERCURY V-8

1965 All Models Except Comet

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

		AABM Group No.	Amp. Hrs.
390 eng.	Manual Trans.	22HF	45
	Optional	24F	55
		27HF	70
	Auto. Trans.	24F	55
	Optional	27HF	70
427 engine		27HF	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
390 2-bbl. carb.; 427 engines 160-200
390 4-bbl. carb. engine 170-210
Maximum variation, 20 psi

SPARK PLUGS

Autolite: 390 eng. BF42; 427 eng. BF32
Gap: BF42 .032"-.036"; BF32 .028"-.032"
Torque: 15-20 ft. lb.

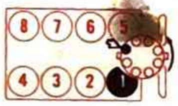
IGNITION POINTS

FoMoCo
Gap: Single points .014"-.016"; dual points .019"-.021"
Dwell angle: Single points 26°-28½°; dual points total dwell 30°-33°, each set with same dwell

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

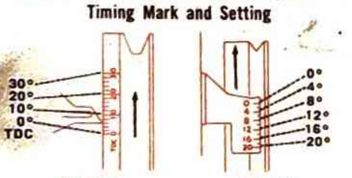


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor as necessary to obtain recommended setting
7. Reconnect vacuum line, reset idle speed

Timing Mark and Setting



390 eng. 427 eng.

Timing Setting (Before Top Dead Center):
390 2-bbl. carb. engine, 6°* **
4-bbl. carb. engine: Man. Trans. 4°* **; Auto Trans. 6°* **
427 engine, 8°**

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting.

** If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 4½-6½ lb. at 500 rpm
Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
FORD			
390 eng. 2-bbl.	1-1½	2 rich	2 rich
4-bbl.	1-1½	index	index
HOLLEY			
427 eng. 4-bbl.	1-1½	index	—

ENGINE IDLE SPEED

390 eng. Man. Trans. 575-600 rpm*
Auto. Trans. 475-500 rpm* in DRIVE
427 eng. Man. Trans. 700-800 rpm*

With air conditioning, as listed above but with unit turned ON and in operation for 20 minutes On cars equipped with vacuum release parking brake, remove vacuum line from power unit of parking brake assembly and plug line to keep parking brake engaged

* Headlights ON. Idle compensator held closed, if so equipped

VALVE CLEARANCES

(engine hot and running)
427 eng.: Intake .025"; exhaust .025"
390 eng.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	20½	19½

Cooling system pressure, 12-15 pounds

36 **Fuel Filter** .... Replace
427-cu. in. eng., at front of left valve cover

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

Crankcase Dipstick .... Check level

C **Steering Gear** (plug) .... SG
Turn wheels to left, remove fill plug and housing cover lower cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru lower cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... HB
Fill to ⅜ inch below top of reservoir

Air Cleaner Element .... Service
★ Dry type .... Clean
36 Dry type .... Replace
12 Polyurethane .... Replace
Models with closed PCV system

36 **Front Suspension and Steering Linkage** .... (8 plugs) LM
Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual .. 80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 3½ pints; with overdrive, 4½ pints. 4-speed, 4 pints
DRAIN and REFILL Not recommended
Overdrive, check level and drain thru separate plug holes. Fill slowly thru transmission

36 **Universal Joints** (plug) .... UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 5 pints; with 427-cu. in. engine, 5½ pints; Power Transfer, 5½ pints
DRAIN and REFILL Not recommended
POWER TRANSFER IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK .... Gallons

Station wagon 20
All other models 21

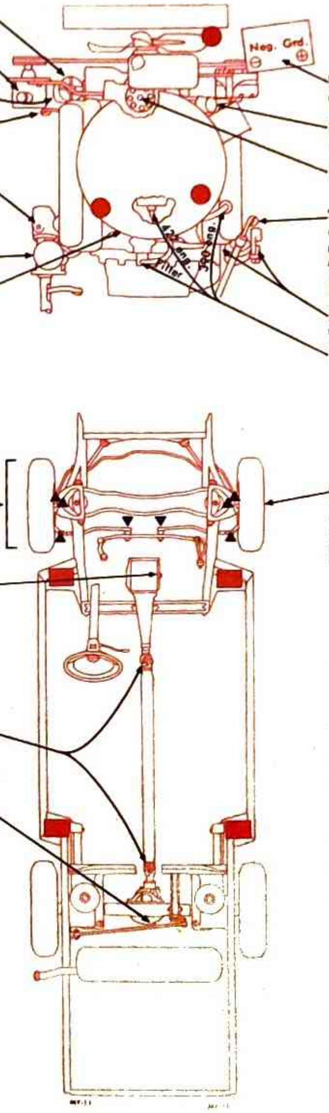
TIRES

Pressure	Front	Rear
8.15-15	24*	24*
Station Wagon	24*	28*†

* For considerable high-speed driving or heavy loading, add 4 pounds

† Tires with 8-ply rating, medium load, front 26, rear 32; heavy load, front 28, rear 36

C Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above –10° 10W-30
Below –10° 5W-20
CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Oil Fill Cap .... Wash ★
390-cu. in. engine, left side

Distributor
Wick under rotor ...... Sparingly 10W MO C

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL Not recommended
Remove 2 converter plugs and disconnect fill pipe

Manifold Heat Control Valve Shaft .... MH ★
On 427-cu. in. engine only

PCV System .... Service
Valve .... Replace 12
All parts .... Clean 12
Including filter on 427-cu. in. engine

Front Wheel Bearings .... Repack WB 30
Initial torque, 17-25 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. No adjustment is normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
30 **Every 30,000 miles**
36 **Every 36,000 miles or 36 months**
C **Conditional service**
Check steering gear periodically and add lubricant as required
Rotate tires and balance wheels as required
Lubricate distributor wick under rotor at time of tune-up

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

Code	Lubricant
EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Power Transfer, use Spec. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

1963
1964
1965

MERCURY COMET 6

1963-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1963-64	22NF	40
1963 Opt.	24F	55
1964 Opt.	24F	65
1965	22HF	45
1965 Opt.	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
1963-64	150-190
1965	155-195

Max. Variation: 1963, 10 psi; 1964-65, 20 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket with tapered seat plugs

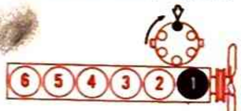
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

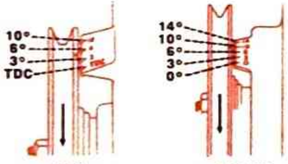


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1963 1964-65

Timing Setting (Before Top Dead Center):
1963: 144 engine
Manual Trans. 8°*; Auto. Trans. 12°*
1963-64: 170 engine
Manual Trans. 6°*; Auto. Trans. 12°*
1964: 200 engine
Auto. Trans. 12°*
1965: 200 engine,
Manual Trans. 6°*; Auto. Trans. 12°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1963-64, 3½-5½ lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl.	1-1½	index*	index

* 1965, C50F-E 2 lean

ENGINE IDLE SPEED

Man. Trans.: 1963-64, 500-525 rpm; 1965, 575-600 rpm*
Auto. Trans. in DRIVE:
144 engine, 500-550 rpm
170, 200 engines, 500-525 rpm*
With air conditioning, as listed but with unit turned ON and in operation for 20 minutes
* 1965, Headlights ON

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	9½	8½

Cooling system pressure, 13-15 pounds

★ **Power Steering Reservoir** .... **FA**
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

12 **PCV System** Early 1963 .... Clean
Clean tube, filter and separator

★ **Oil Filter** .... Replace
Add extra quart oil

C **Distributor Shaft** (oil cup)..Sparingly 10W **MO**

Crankcase Dipstick .... Check level

36 **Fuel Filter** .... Replace

Air Cleaner Element .... Service
★ Dry type .... Clean
Dry type .... Replace
36 1964-65 24 1963
12 Polyurethane .... Replace
1964-65 models with closed PCV system

C **Steering Gear** (plug) .... **SG**
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... **HB**
Fill to ¼-½ inch below top of cylinder

36 **Front Suspension** ....(4 or 6 plugs) **LM**
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** ......(5 or 6 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** ....(plug) **LM**
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual ...80 EP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 4½ pints
DRAIN and REFILL Not recommended

36 **Universal Joints** (plug) .... **UJ**
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL ....90 HP*

Below –25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 2½ pints
DRAIN and REFILL Not recommended
POWER TRANSFER IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK ....Gallons

1963	14
1964-65	20

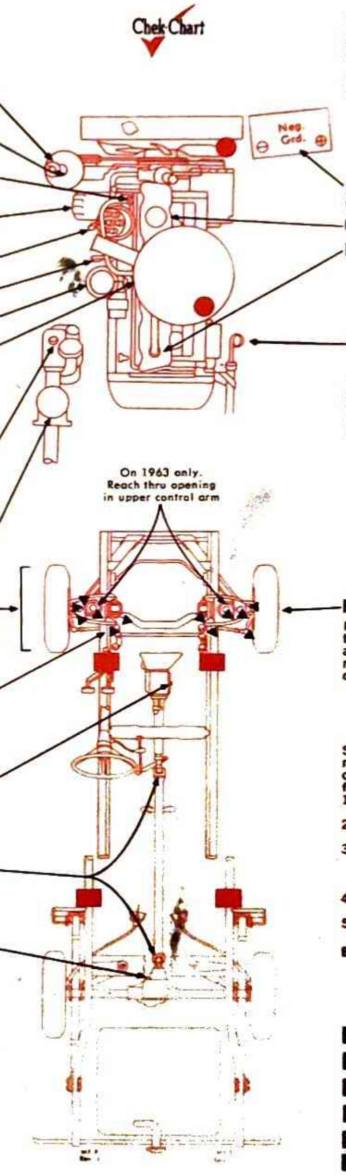
TIRES

Pressure	Front	Rear
6.00-13, 6.50-13, 7.00-13	24*	24*
6.50-14, 6.95-14, 7.00-14	24*	24*
Station wagon	24*	28*

* For considerable high-speed driving or heavy loading, add 4 pounds

C Rotate tires, Method A, then balance wheels

Chek-Chart



CRANKCASE ....“MS” MO

Above –10°	10W-30
Below –10°	5W-20

CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Oil Fill Cap .... Wash ★

PCV System Late 1963, 1964-65 .... Service
Valve Late 1963, early 1964 .... Clean ★
Others, jiggle-pin type .... Replace 12
All parts .... Clean 12

TRANSMISSION, Automatic ..FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings .... Repack **WB** 30
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
24 **Every 24,000 miles or 24 months**
30 **Every 30,000 miles**
36 **Every 36,000 miles or 36 months**
C **Conditional service**
Lubricate distributor shaft at time of tune-up
Check steering gear periodically and add lubricant as required
Inspect steering linkage periodically
Rotate tires and balance wheels as required

🟥 **Position for lift adapter**
▲ **Prepacked bearing**
● **Cooling system drain**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Power Transfer, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

MERCURY COMET V-8

1963-65 All Models

1963
1964
1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1963-64	24F	55, 65
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 130-170

1963: Maximum cylinder variation, 10 psi

1964-65: Maximum cylinder variation, 20 psi

SPARK PLUGS

Autolite: BF42, except 289 High Perf. BF32

Gap: BF42 .032"-.036", BF32 .028"-.032"

Torque: 15-20 ft. lb.

Do not use gasket with tapered seat plugs

IGNITION POINTS

FoMoCo

Gap: .014"-.016", except 289 High Performance .019"-.021"

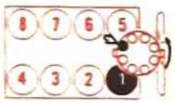
Dwell angle: 26°-28½°, except 289 High Perf. total dwell 30°-33°, each set with same dwell

CONDENSER

FoMoCo

Capacity: .21-.25 mfd

Cylinder Numbering Sequence

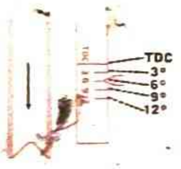


Firing Order: 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor as necessary to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1963:
Manual Trans. 6° (Allowable range, 2°-11°)
Auto. Trans. 10° (Allowable range, 2°-15°)
1964: 260 engine
Manual Trans. 6°*; Auto. Trans. 10°*
289 engine
Manual Trans. 6°*; Auto. Trans. 8°*
High Performance, 10°*
1965: 289 engine, 6°*

* If engine requirements or substandard fuels dictate, timing may be retarded from recommended setting to eliminate detonation but not to exceed 2° BTDC

FUEL PUMP

AC mechanical

Pressure: 6 lb. at 500 rpm

Volume: 1 pint in 20 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD		Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1963	2-bbl.	1½	4 lean	4 lean
1964	2-bbl.	1-1½	2 rich	2 rich
	4-bbl.	1-1½	1 lean	3 lean
1965	2-bbl.	1½	2 rich*	2 rich
	4-bbl.	1-1½	2 rich**	2 rich

* C5ZF-A & G, index

** C4GF-AE, index

ENGINE IDLE SPEED

Manual Trans. 575-600 rpm*

Auto. Trans. 475-500 rpm*; except 289 High Performance 700-800 rpm, in DRIVE

With air conditioning, as listed but with unit turned ON and in operation for 20 minutes

* 1965, Headlights ON

VALVE CLEARANCES

289 High Perf. Intake .018", exhaust .018"

Others: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	14½	13½

Cooling system pressure, 12-15 pounds

36 **Fuel Filter** (under car) .... Replace

★ **Power Steering Reservoir** .... FA
Fill to FULL mark on gage. Without gage, fill to bottom of filler tube. 1963-64 with air conditioning, reservoir on left fender apron; fill to ¾ to 1 inch from top

36 **Power Steering Filter** .... Replace
1963-64 only. Inside reservoir

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Oil Fill Cap** .... Wash
1963, located on right side, front of air cleaner

C **Distributor Shaft** (fill oil cup) .... 10W MO
1965, no oil cup

C Wick under rotor ...... Sparingly 10W MO

Air Cleaner Element .... Service
★ Dry type .... Clean
Dry type .... Replace
36 1964-65 30 1963
12 Polyurethane .... Replace
1964-65 models with closed PCV system

C **Steering Gear** (plug) .... SG
Turn wheels to right, remove fill plug and housing cover upper cap screw. Fill thru plug hole until lubricant comes out of cap screw hole. With power brakes, fill thru upper cap screw hole, with steering wheel centered

★ **Brake Master Cylinder** (cap) .... HB
Fill to ¼-½ inch below top of cylinder

36 **Front Suspension** .... (4 or 6 plugs) LM
Lubricate using special adapter. Reinstall plug

C **Steering Linkage** ...... (5 or 6 sealed bearings)
Inspect seal; if damaged, or if there is any evidence of looseness, replace entire pivot assembly

36 **Pitman Arm Stud** .... (plug) LM
Models with power steering only. Lubricate using special adapter. Reinstall plug

TRANSMISSION, Manual ... 80 EP

★ Maintain level to fill plug hole

CAPACITY 3-speed, 3½ pints; 4-speed, Warner 3½ pints, Ford 4 pints

DRAIN and REFILL Not recommended

36 **Universal Joints** (plug) .... UJ
Lubricate using special adapter. Reinstall plug

DIFFERENTIAL .... 90 HP*

Below –25°, use 80 grade

★ Maintain level to fill plug hole
1964-65, fill plug on rear cover

CAPACITY 4½ pints; with 289-cu. in., 271-hp engine, 5 pints

DRAIN and REFILL Not recommended

POWER TRANSFER IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

GAS TANK .... Gallons

1963	14
1964-65	20

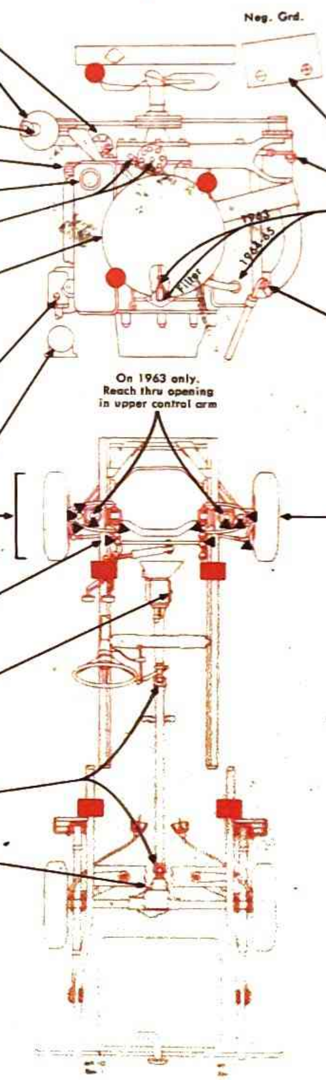
TIRES

.... Pressure	Front	Rear
6.50-14, 6.95-14	24*	24*
7.00-13, 7.00-14, 7.35-14	24*	24*
Station wagon	24*	28*

* For considerable high-speed driving or heavy loading, add 4 pounds

C **Rotate tires, Method A, then balance wheels**

Chek Chart



CRANKCASE .... "MS" MO

Above –10°	10W-30
Below –10°	5W-20

CAPACITY 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check level monthly

Crankcase Dipstick .... Check level

PCV System .... Service
Valve 1963, early 1964 .... Clean ★
Others, jiggle-pin type .... Replace 12
All parts .... Clean 12
Including filter on 1963 only

TRANSMISSION, Automatic .. FA

Check level, fluid warm, engine idling, in PARK .. ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8½*

*Dry capacity shown, fill only to FULL mark

DRAIN and REFILL Not recommended
Remove 2 converter plugs and oil pan

Front Wheel Bearings .... Repack WB 30
Repack on mileage basis only
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. No adjustment is normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding sequence: RR, LR, RF, LF

🟥	Position for lift adapter
▲	Prepacked bearing
●	Cooling system drain

KEY TO INTERVALS

★	Every 6,000 miles or 6 months
12	Every 12,000 miles or 12 months
30	Every 30,000 miles or 24 months
36	Every 36,000 miles or 36 months
C	Conditional service Lubricate distributor shaft and wick at time of tune-up Check steering gear periodically and add lubricant as required Inspect steering linkage periodically Rotate tires and balance wheels as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lub. Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP•	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A; with 289-cu. in., 271-hp engine, ESW-M-2C57-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
UJ	Universal Joint Grease Specification No. ESA-M-1C57-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

• Power Transfer, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

OLDSMOBILE V-8

1961-64 All Models Except F-85

1961
1962
1963
1964

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Regular fuel engine	60	62, 70
Premium fuel engine	60	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All .... minimum 100*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC: Jetstar 88, 44S; Dynamic 88 regular fuel eng. 45; others, 44

Gap: .030" Torque: 35 ft. lb.

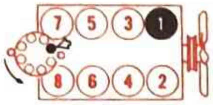
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

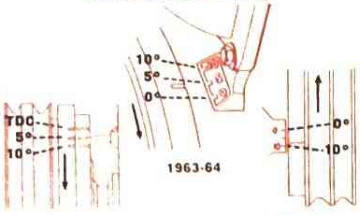


Firing Order: 1, 8, 7, 3, 6, 5, 4, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 850 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1961-62 1963-64 Jetstar 88

Timing Setting (Before Top Dead Center):
1961: Regular fuel engine, 5°; Premium fuel engine, 7½°; at 850 rpm
1962-64: Manual Trans. 2½°; Auto. Trans. 5°; at 850 rpm

FUEL PUMP

AC mechanical
Pressure: 5-6 lb. at 1800 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1½	index*	index*
4-bbl. 4GC	1½	index	index

* 1962-63, 1 lean

ENGINE IDLE SPEED

Manual Trans.: 1961-63, 550 rpm; 1964 except Jetstar 88, 550 rpm; Jetstar 88, 600 rpm
Auto. Trans. 500 rpm in DRIVE
Air Cond. Same rpm* with unit turned OFF, and idle compensator valve held closed (Dealer installed unit turned ON)
* 1964, 550 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1961-63 All with air cond.	22	21
Without air cond.	20¼	19¼
1964 Jetstar 88 with air cond.	18½	17½
Without air cond.	17	16
1964 Others with air cond.	21½	20½
Without air cond.	19¾	18¾

Cooling system pressure, 15 pounds

★ **Battery** .... Test and fill

Oil Fill Cap .... Wash and oil 10W-30 **MO**
★ 1961-62; 1964 Jetstar 88
12 1963; all other 1964
With closed PCV system, sealed cap, no service

★ **Power Steering Reservoir** .... **AF,PS**
Fill to level mark, fluid at operating temperature

2 **Generator** (2 oil cups) 1961 .... **MO**

Air Cleaner Element .... Service
Dry type .... Replace
16 1961-62 **18** 1963-64
Washable type ... Wash and oil 10W-30 **MO**
8 1961-62 **12** 1963
With closed PCV system, wash and oil gauze filter located inside air cleaner housing, every 6,000 miles

★ **PCV Breather** .... **MO**
1961-62. Wash and oil

★ **Manual Steering Gear** .... 80 **MP**

Crankcase Dipstick .... Check level

10 **PCV System** 1961-62 .... Clean
Remove and clean valve and hose. Remove air cleaner to service

★ **Brake Master Cylinder** (cap) .... **HB**
Fill to ¼ inch below top of reservoir; Bendix power brakes, ¾ inch below top of reservoir

★ **Clutch Pedal Bell Crank** (2 felts) ... 10W-30 **MO**
Jetstar 88, no service

2 **Distributor Shaft** (oil cup) 1961 .... **MO**

Front Suspension
2 1961 .... (4 fittings) **CL**
8 1962, **6** 1963-64 .... Inspect seals
C 1962, **30** 1963-64 .... (4 plugs) **BJ**
Inspect for damaged seals or noisy ball joints. Refer to dealer for service

6 **Steering Linkage** 1963-64 ...... (4 fittings) **CL**

★ **Clutch Release Bell Crank** (2 felts). 10W-30 **MO**
Jetstar 88, 1 felt

24 **Speedometer Cable** .... Coat lower ⅔ **SP**

TRANSMISSION, Manual .. 80 MP

★ Maintain level to fill plug hole
CAPACITY 3-speed: Jetstar 88, **2 pints; all others, 2½ pints.** 4-speed: **2¼ pints**
DRAIN and REFILL Not recommended

C **Parking Brake Cables** .... Coat **LM**

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole
CAPACITY Jetstar 88, **2¾ pints; all others, 5 pints**
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to carrier opposite fill plug except Jetstar 88, attached to rear cover

GAS TANK .... Gallons

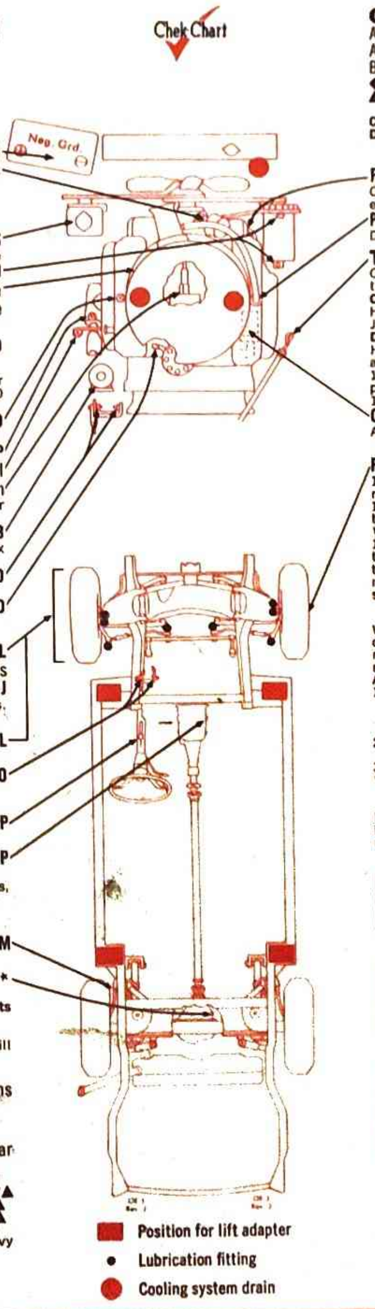
	Gallons
1961-62	20
1963-64	21

TIRES .... Pressure

Pressure	Front	Rear
7.50-14	24	24
8.00-14	24	22*
8.50-14	22▲	22*▲
Starfire and 88, with air cond.	24	22▲
9.00-14	22▲	22▲

* Fiesta, 24; heavy loads for long distances, 28
▲ 1964 models, 24; station wagons carrying heavy loads for long distances, add 4 pounds

Rotate tires, Method A
4 1961-62 **6** 1963-64



▨ Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	20W◆	10W-30
Above 0°	10W	10W-30**
Below 0°	5W▲	5W-20**

◆ 30 may be used above +90°.
▲ 5W not recommended for sustained high speed above +60° **1963-64, 5W-30 may be used

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter (glass bowl type) .... Service **C**
Clean glass bowl and clean or replace ceramic element. Jetstar 88, no service

PCV System 1963-64 .... Clean **12**
Disassemble and clean all parts

TRANSMISSION, Automatic .. AF

Check level, engine idling at operating temperature, PARK position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
Hydra-Matic	5	Approx. 5½
Jetaway	3	3

DRAIN and REFILL **24**
Hydra-Matic, to drain, disconnect fill pipe; Jetaway, remove oil pan
1961-62, for extended slow-speed city driving, prolonged idling and trailer hauling, drain every 10,000 miles

Oil Filter (under car) .... Replace
Add extra quart oil
1961-62 **4** 1963-64 **6**

Front Wheel Bearings .... Repack **WB** **C**
1961, initial torque 17 ft. lb.; back off nut and retighten to 4 ft. lb.
1962-63, initial torque 23-25 ft. lb.; back off ½ turn; second torque 15-17 ft. lb. 1961-63, back off ⅙ to ¼ turn and install cotter pin, or retainer. 1964, initial torque 25-30 ft. lb.; back off nut ½ turn. Retighten nut finger-tight and install retainer. All years, torque adjustment should be made when wheel is turning at least 3 times speed of nut rotation

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 4" with standard brakes or more than 1⅝" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:*

1. Using a suitable tool inserted into the backing plate adjusting slot, expand the shoes until a heavy uniform drag is felt when revolving the brake drum
2. Back off adjustment 16 notches. Drum should turn freely
3. Repeat operation at each wheel

* 1962 power brakes and all 1963-64 brakes are self-adjusting. DO NOT attempt to manually adjust the shoe clearance on these cars

Bleeding sequence: LF, RF, LR, RR With power brakes, engine must be stopped and vacuum reserve depleted

KEY TO INTERVALS

★ Every crankcase oil change
2 Every 2,000 miles
4 Every 4,000 miles
Oil Filter 1961-62: Every 4,000 miles or 6 months
6 Every 6,000 miles or 6 months
8 Every 8,000 miles
10 Every 10,000 miles
12 Every 12,000 miles or 4 months
PCV System: Every 12,000 miles or 12 months
16 Every 16,000 miles
18 Every 18,000 miles or 18 months
24 Every 24,000 miles or 24 months
30 Every 30,000 miles or 30 months
C Conditional service
1962, lubricate front suspension when seals are damaged or ball joints noisy
Coat parking brake cables and brake backing plate shoe contacts at time of major brake service
Service fuel filter as required
Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
Power Steering Reservoir: 1964 models, if more than 1 pt. of fluid is required, use PS

BJ Suspension Lubricant
Oldsmobile Part No. 585617

CL Chassis Lubricant
Water Resistant EP Type

HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3

LM Lithium Grease

MO Motor Oil

MP* Multi-Purpose Gear Lubricant

PS Power Steering Fluid
GM Part No. 1050017

SP Speedometer Cable Grease

WB Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081
Anti-Spin differential, special lubricant Part No. 1050081

OLDSMOBILE V-8

1965 All Models Except F-85

Starfire, Jetstar
Ninety-Eight
Others

HOOD RELEASE: Front

2/250

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Jetstar 88	24	61
Others, regular fuel	27	70
Others, premium fuel	27	73

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All ....minimum 100
Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC 45S 2-bbl. low compression engines
AC 44S 2-, 4-bbl. high compression engines
Gap: .030"
Torque: 35 ft. lb.

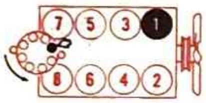
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

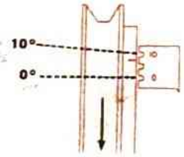


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 850 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
330 engs. 7½° at 850 rpm
425 L.C. eng. 7½° at 850 rpm
425 H.C. engs. 5° at 850 rpm

FUEL PUMP

AC mechanical
Pressure: 7-8½ lb. at idle to 1000 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1½	index*	index*
4-bbl. 4GC	1½	index	index

* 425 eng. with manual trans., 1 lean

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 500 rpm in DRIVE
Air Cond.: Manual Trans. 600 rpm; Auto. Trans. 550 rpm in DRIVE; unit turned OFF; idle compensator valve held closed (Dealer installed unit turned ON)

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek Chart

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
Jetstar 88	16½*	15½
All other models	17½*	16½

Do not fill above level mark on side of radiator below fill cap
* All models with air conditioning, add ½ quart
Cooling system pressure, 15 pounds.

★ **Battery** ....Test and fill

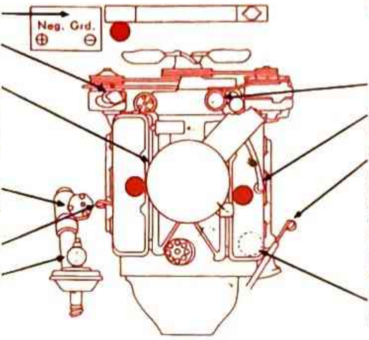
★ **Power Steering Reservoir** ....AF, PS
Fill to level mark, fluid at operating temperature

Air Cleaner Element ....Service
18 **Dry type** ....Replace
Severe service, replace more often
With closed PCV system, wash and oil wire gauze filter located inside air cleaner housing, every 6,000 miles

36 **Manual Steering Gear** CL
Fill thru top cover cap screw marked "Check Lube"

Crankcase Dipstick ....Check level

★ **Brake Master Cylinder** ....HB
Fill to ¼ inch below top of reservoir



CRANKCASE ...."MS" MO

Above +32°	20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W‡	5W-20,5W-30

* 30 may be used above +90°
‡ 5W not recommended for sustained high speed above +60°

CAPACITY 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap ....Wash and oil 10W-30 MO ★

PCV System ....Clean 12
Disassemble and clean all parts

TRANSMISSION, Automatic ..AF

Check level, engine idling at operating temperature, PARK position .... ★
CAPACITY Refill Jetstar 88, approx. 3 quarts; all others, approx. 4 quarts
DRAIN and REFILL 24
Remove oil pan
Replace transmission filter at time of drain
Severe service, drain every 12,000 miles

Oil Filter ....Replace 6
Add extra quart oil

Front Suspension ....(4 plugs) CL
6 Inspect seals for damage
6M Lubricate initially at 36,000 miles and every 6 months or 12,000 miles thereafter. Use special adapter

6M **Steering Linkage** ....(7 fittings) CL

★ **Clutch Release Bell Crank** (felt) ....MO

TRANSMISSION, Manual ..80 MP

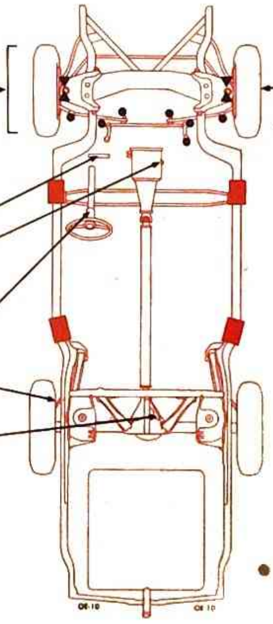
★ Maintain level to fill plug hole
CAPACITY 3-speed, 3 pints; 4-speed, 2¼ pints
DRAIN and REFILL Not recommended

24 **Speedometer Cable** ....Coat lower ⅔ SP

C **Parking Brake Cables** ....Coat LM

DIFFERENTIAL ....90 MP*

★ Maintain level to fill plug hole
CAPACITY 4¾ pints; Jetstar 88, 3 pints
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to rear cover



Front Wheel Bearings ....Repack WB C
Initial torque 25-30 ft. lb.; back off nut ½ turn and retighten nut finger tight, reinstall retainer. Torque adjustments should be made with the wheel turning at least 3 times the speed of nut rotation
Use caution when removing left wheel so as not to damage speedometer cable

BRAKE ADJUSTMENT

Brakes are self-adjusting. DO NOT attempt to manually adjust the brakes on these cars
Bleeding sequences: LF, RF, LR, RR

GAS TANK ....Gallons

All models 25

TIRES ....Pressure

	Front	Rear
7.75-14, 8.25-14, 8.55-14, 8.85-14	24	24*
8.85-15	24	24*

* With heavy loads, maximum inflation 30 pounds

6 Rotate tires, Method A

🟥 Position for lift adapter
● Lubrication fitting
▲ Prepacked bearing
● Cooling system drain

KEY TO INTERVALS

★ Every crankcase oil change
6 Every 6,000 miles or 6 months
6M Every 6 months or 12,000 miles
12 Every 12,000 miles or 12 months
18 Every 18,000 miles or 18 months
24 Every 24,000 miles or 24 months
36 Every 36,000 miles
C Conditional service
Coat parking brake cables and brake backing plate shoe contacts at time of major brake service
Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A Power Steering Reservoir: If more than 1 pt. of fluid is required, use PS
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
PS	Power Steering Fluid GM Part No. 1050017
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081; Anti-Spin differential, special lubricant Part No. 1050081

OLDSMOBILE F-85

1961-62 All Models

1961

1962

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	22F	42

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All . . . . minimum 100*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC: 2-bbl. carb., 46FFX; 4-bbl. carb., Jetfire, 45FF
Gap: .030"
Torque: 12-17 ft. lb.*
* Use thread lubricant

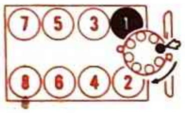
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

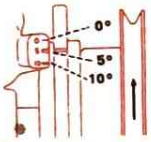


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 850 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
2-bbl. carb. with Manual Trans. 5° at 850 rpm
2-bbl. carb. with Auto. Trans. 7½° at 850 rpm
4-bbl. carb. 7½° at 850 rpm
Jetfire, 10° at 850 rpm

FUEL PUMP

AC mechanical
Pressure: 1961, early 1962 (metal bottom cover): 4-5¼ lb. at 1800 rpm
Late 1962 (glass filter bowl): 7½-8½ lb. at 1800 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1½	index	1 lean*
4-bbl. 4GC	1½	index**	index**
RC (Jetfire)	1½	manual	index

* 1962, index
** 1962, 1 rich; fuel pump with glass filter bowl, 2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 500 rpm in DRIVE
Air Cond. 550* rpm with unit turned OFF and idle compensator valve held closed (Dealer installed unit turned ON)
* Auto. Trans. in DRIVE

LVE CLEARANCES

draulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . Quarts	With Heater	Without Heater
Jetfire	11½	10
Air Cond. ex. Jetfire.	12½	11
All others	12	10½

Cooling system pressure, 15 pounds

C **Turbo-Rocket Fluid Tank** . . . . TR
Check and fill as required. Jetfire only
CAPACITY 5 quarts

★ **Power Steering Reservoir** . . . . AF
Fill to FULL mark on gage, fluid at operating temperature

C **Fuel Filter** . . . . Service
Clean glass bowl and clean or replace ceramic element

★ **Manual Steering Gear** . . . . 80 MP

OC **Oil Fill Cap** . . . . Wash and oil 10W-30 MO
Jetfire, right side forward

Crankcase Dipstick . . . . Check level

Air Cleaner Element . . . . Service
Jetfire, side mounted
16 Dry type . . . . Replace
8 Washable type . . . . Wash and oil 20 MO
Service more often in extreme dust

★ **Brake Master Cylinder** (cap) . . . . HB
Fill to ¼ inch below top of fill hole

★ **Front Suspension and Steering Linkage** . . . . (17 fittings) CL

★ **Clutch Equalizer Shaft** CL

TRANSMISSION, Manual . . 80 MP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

24 **Speedometer Cable** . . . . Coat lower ⅔ SP

C **Parking Brake Cables** . . . . Coat LM

DIFFERENTIAL . . . . 90 MP*

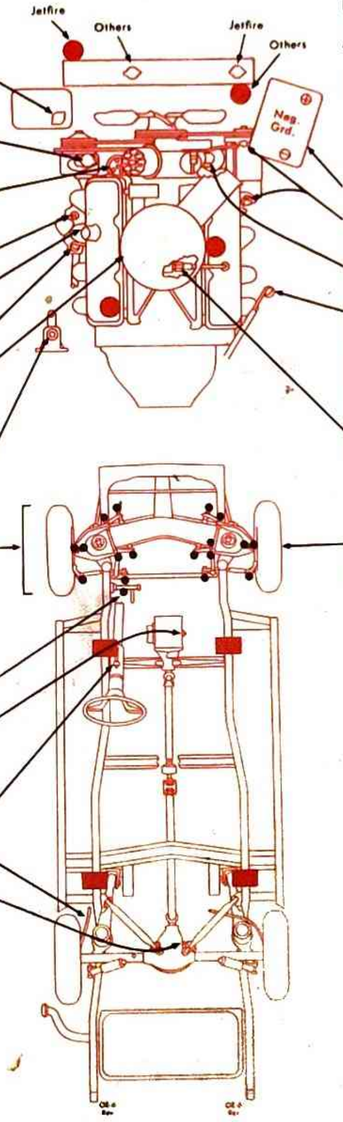
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to fill plug

GAS TANK	Gallons
Station wagon, 3-seat	15
All other models	16

TIRES . . . . Pressure	Front	Rear
6.00-15	22*	22*▲
6.50-13	22*	22*▲
7.00-13	22	22▲

* With air conditioning and convertibles, 24
▲ Station wagons carrying heavy loads for long distances, 26

4 Rotate tires, Method A



Chek-Chart

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE		"MS" MO
Above +32°	20W*	10W-30
Above 0°	10W	10W-30
Below 0°	5W▲	5W-20

* 30 may be used above +90°
▲ 5W not recommended for sustained high speed above +60°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery . . . . Test and fill ★

Generator (2 oil cups) . . . . MO ★
Jetfire, no lubrication

Oil Filter (under car) . . . . Replace 4
Add extra quart oil

TRANSMISSION, Automatic . . AF

Check level, engine idling at operating temperature, PARK position . . . . ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	3½	Approx. 4

DRAIN and REFILL 24
Remove 1 oil pan drain plug

PCV System Valve . . . . Clean 10
Remove air cleaner to service
Remove and clean valve and hose
Jetfire on left valve cover, rear

Front Wheel Bearings . . . . Repack WB C
Initial torque, 18-20 ft. lb. while turning wheel; back off ½ turn; second torque, 8-12 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 4" with standard brakes or more than 2" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:

1. Using a suitable tool inserted into backing plate adjusting slot, expand shoes until a heavy drag is felt when revolving brake drum
2. Back off adjustment 15 notches. Drum should turn freely
3. Repeat operation at each wheel

Bleeding sequence: RR, LR, RF, LF With power brakes, engine must be stopped and vacuum reserve depleted

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
8 Every 8,000 miles
10 Every 10,000 miles
16 Every 16,000 miles
24 Every 24,000 miles
OC Every crankcase oil change
C Conditional service
Check and fill Turbo-Rocket fluid tank as required
Service fuel filter as required
Coat parking brake cables at time of major brake service
Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant, Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SP	Speedometer Cable Grease
TR	Turbo-Rocket Fluid GM Part No. 585411
WB	Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081
Anti-Spin differential, special lubricant Part No. 1050081

OLDSMOBILE F-85

1963 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All ....minimum 100*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC: 2-bbl. carb., 46FFX; 4-bbl. carb., 45FF, with Auto. Trans. 44FF, Jetfire 45FF
Gap: 4-bbl. carb. with Manual Trans., Jetfire, .025"; others, .030"
Torque: 12-17 ft. lb.*
* Use thread lubricant

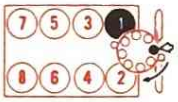
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

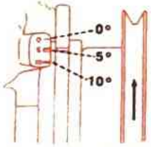


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 850 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
2-bbl. carb. with Manual Trans. 5° at 850 rpm
2-bbl. carb. with Auto. Trans. 7½° at 850 rpm
4-bbl. carb. 7½° at 850 rpm
Jetfire, 10° at 850 rpm

FUEL PUMP

AC mechanical
Pressure: 6-8 lb. at 1800 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1½	index	index
4-bbl. 4GC	1½	index	index
RC (Jetfire)	1	manual	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm*
Auto. Trans. 500 rpm in DRIVE*
Air Cond. 600 (4-bbl. with Auto. Trans., 550) rpm** with unit turned OFF and idle compensator valve held closed. Dealer-installed unit turned ON
* Jetfire, 600 rpm
** Auto. Trans. in DRIVE

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
Jetfire	11½	10
Air Cond. ex. Jetfire.	12½	11
All others	12	10½

Cooling system pressure, 15 pounds

C **Turbo-Rocket Fluid Tank**................**TR**
Check and fill as required. Jetfire only
CAPACITY 5 quarts

★ **Power Steering Reservoir**................**AF**
Fill to FULL mark on gage, fluid at operating temperature

C **Fuel Filter** ....Service
Clean glass bowl and clean or replace ceramic element

Air Cleaner Element................Service
Jetfire, side mounted
18 Dry type ....Replace
12 Washable type.. Wash and oil 10W-30 **MO**

★ **Manual Steering Gear** (plug)...........80 **MP**

12 **Oil Fill Cap**........ Wash and oil 10W-30 **MO**
Jetfire, right side forward

Crankcase Dipstick..............Check level

★ **Brake Master Cylinder** (cap)..............**HB**
Fill to ¼ inch below top of fill hole

6 **Front Suspension and Steering Linkage**..........(16 fittings) **CL**

TRANSMISSION, Manual..80 MP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2½ pints
DRAIN and REFILL Not recommended

24 **Speedometer Cable**.........Coat lower ⅔ **SP**

C **Parking Brake Cables**..............Coat **LM**

DIFFERENTIAL ....90 MP*

★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to fill plug

GAS TANK ....Gallons

All models 16

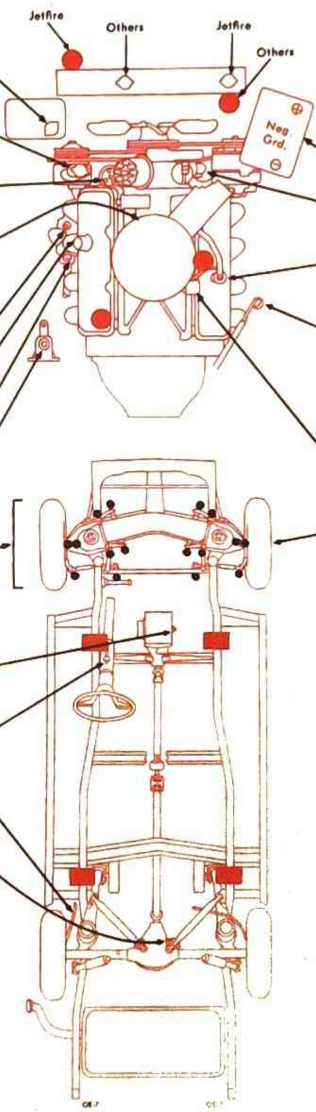
TIRES

...........Pressure	Front	Rear
[illegible].00-15, 6.50-13	22*	22
Station wagons	22*	24▲
6.50-14	22*	22▲

* With air conditioning, convertibles & Jetfire, 24
▲Station wagons carrying heavy loads for long distances, add 4 pounds

6 Rotate tires, Method A

Chek-Chart



▨ **Position for lift adapter**
● **Lubrication fitting**
● **Cooling system drain**

CRANKCASE..............."MS" MO

Above +32°..........	20W*	10W-30
Above 0°..............	10W	10W-30,5W-30
Below 0°..............	5W‡	5W-20,5W-30

* 30 may be used above +90°
‡ 5W not recommended for sustained high speed above +60°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery......................Test and fill ★

Oil Filter (under car)...............Replace **6**
Add extra quart oil

PCV System ....Clean **12**
Disassemble and clean all parts
Jetfire on left valve cover, rear

TRANSMISSION, Automatic..AF

Check level, engine idling at operating temperature, PARK position.......................★

CAPACITY, quarts	Initial Refill	Total Refill
All models	3½	Approx. 4

DRAIN and REFILL......................... **24**
Remove 1 oil pan drain plug

Choke Air Inlet Filter. Wash and oil 10W-30 **MO** **12**

Front Wheel Bearings............Repack **WB** **C**
Initial torque, 18-20 ft. lb. while turning wheel; back off ½ turn; second torque, 8-12 ft. lb.; back off ⅙ to ¼ turn and insert cotter pin

BRAKE ADJUSTMENT

Brakes are self-adjusting. DO NOT attempt to manually adjust the brakes on these cars

Bleeding sequence: RR, LR, RF, LF With power brakes, engine must be stopped and vacuum reserve depleted

KEY TO INTERVALS

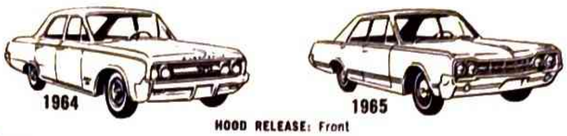
- ★ **Every crankcase oil change**
- **6** **Every 6,000 miles or 6 months**
- **12** **Every 12,000 miles or 4 months**
  - PCV System: Every 12,000 miles or 12 months
- **18** **Every 18,000 miles or 18 months**
- **24** **Every 24,000 miles or 24 months**
- **C** **Conditional service**
  - Check and fill turbo-rocket fluid tank as required
  - Service fuel filter as required
  - Coat parking brake cables at time of major brake service
  - Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SP	Speedometer Cable Grease
TR	Turbo-Rocket Fluid GM Part No. 585411
WB	Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081
Anti-Spin differential, special lubricant Part No. 1050081



OLDSMOBILE F-85 V-6

1964-65 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All ....minimum 100

Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC 44S
Gap: .030"
Torque: 35 ft. lb.

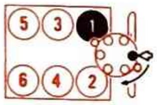
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

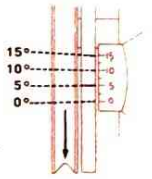


Firing Order: 1, 6, 5, 4, 3, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect tachometer
4. Connect timing light to No. 1 spark plug
5. Set engine speed to idle rpm with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
5 : 1964 at idle rpm; 1965 at 550 rpm

FUEL PUMP

AC model JU
Pressure: 1964, 4-5¼ lb.; 1965, 5-6 lb.; at idle to 1000 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. 1BC	1-1½	index	index

ENGINE IDLE SPEED

Manual Trans.: 1964, 600 rpm; 1965, 550 rpm
Auto. Trans.: 1964, 600 rpm; 1965, 500 rpm; in DRIVE
Air Cond.: 1964, 600 rpm; 1965, Man. Trans. 600 rpm, Auto. Trans. 550 rpm in DRIVE; with unit turned OFF and idle compensator held closed, if so equipped

ALVE CLEARANCES

raulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models with air conditioning..	11¼	10½
All other models....	10¾	10

Cooling system pressure, 15 pounds

Manual Steering Gear. ....Check level
★ 1964 ....80 **MP**
36 1965 ....**CL**
Fill thru top cover cap screw marked "Check Lube"

★ **Power Steering Reservoir**.............**AF, PS**
Fill to level mark, fluid at operating temperature

Air Cleaner Element................Service
12 Washable type...Wash and oil 10W-30 **MO**

Crankcase Dipstick...............Check level

★ **Oil Fill Cap**.........Wash and oil 10W-30 **MO**
If cap is sealed type, wash and oil PCV system breather filter on valve cover. Also remove and clean hose

★ **Brake Master Cylinder** (cap).............**HB**
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage......(8 or 12 fittings) **CL**
6 1964 6M 1965

★ **Clutch Release Bell Crank** (felt)...........**MO**

TRANSMISSION, Manual..80 MP

★ Maintain level to fill plug hole
CAPACITY 3-speed, **2 pints**; 4-speed, **2¼ pints**
DRAIN and REFILL Not recommended

24 **Speedometer Cable**........Coat lower ⅔ **SP**

C **Parking Brake Cables**.............Coat **LM**

DIFFERENTIAL ....90 MP*

★ Maintain level to fill plug hole
CAPACITY 1964, **2¾ pints**; 1965, **3 pints**
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to rear cover

GAS TANK.................Gallons

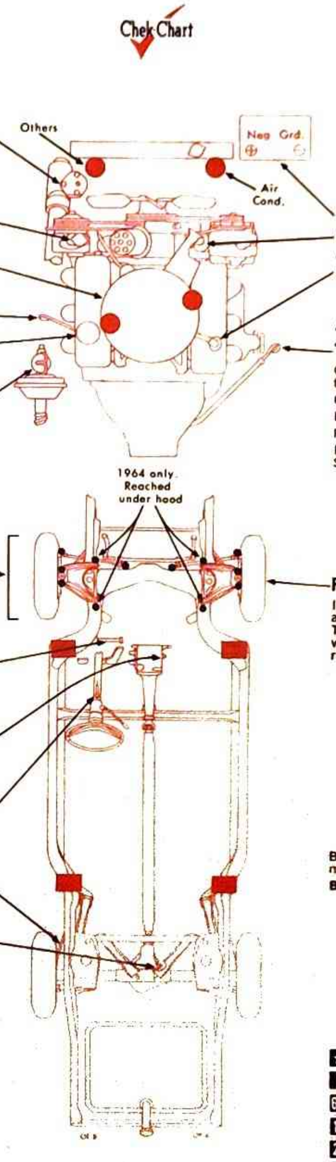
All models **20**

TIRES

Pressure	Front	Rear
6.50-14, 7.00-14, 7.50-14..........	24	24*
6.95-14, 7.35-14, 7.75-14..........	24	24†‡

* Station wagons carrying heavy loads, **28**
† Station Wagon, **28**
‡ When carrying heavy loads, maximum inflation, **30** pounds

6 Rotate tires, Method A



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE

		"MS" **MO**
Above +32°	20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W‡	5W-20,5W-30

* 30 may be used above +90°
‡ 5W not recommended for sustained high speed above +60°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery.......................Test and fill ★

Oil Filter (under car)..................Replace 6
Add extra quart oil

PCV System Valve
1964 ....Replace 6
1965 ....Clean 12
All models, remove and clean hose

TRANSMISSION, Automatic..AF

Check level, engine idling at operating temperature, PARK position.......................... ★
CAPACITY Refill approx. 3 quarts
DRAIN and REFILL.......................... 24
Remove oil pan
Replace transmission filter at time of drain
Severe service, drain every 12,000 miles

Front Wheel Bearings............Repack **WB** C
Initial torque, 25-30 ft. lb.; back off nut ½ turn and tighten nut finger-tight and install retainer. Torque adjustments should be made with the wheel turning at least 3 times the speed of nut rotation

BRAKE ADJUSTMENT

Brakes are self-adjusting. DO NOT attempt to manually adjust the brakes on these cars
Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ **Every crankcase oil change**
6 **Every 6,000 miles or 6 months**
6M **Every 6 months or 12,000 miles**
12 **Every 12,000 miles or 12 months**
24 **Every 24,000 miles or 24 months**
36 **Every 36,000 miles**
C **Conditional service**
Coat parking brake cables and brake backing plate shoe contacts at time of major brake service
Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
Power Steering Reservoir: If more than 1 pt. of fluid is required, use PS
CL Chassis Lubricant
Water Resistant EP Type
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM Lithium Grease
MO Motor Oil
MP* Multi-Purpose Gear Lubricant
PS Power Steering Fluid
GM Part No. 1050017
SP Speedometer Cable Grease
WB Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081; Anti-Spin differential, special lubricant Part No. 1050081

OLDSMOBILE F-85 V-8

1964-65 All Models

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All . . . . minimum 100
Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC: Low comp. 45S; High comp. 44S
Gap: .030"
Torque: 35 ft. lb.

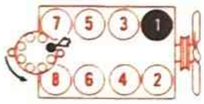
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

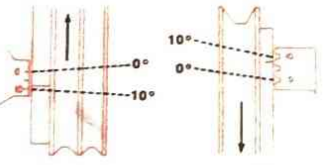


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 850 rpm, transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1964 1965

Timing Setting (Before Top Dead Center):
7½° at 850 rpm

FUEL PUMP

AC mechanical
Pressure: 7-8½ lb. at idle to 1000 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2GC	1½	1 lean*	1 lean*
4-bbl. 4GC	1½	index	index

* 1965, index

ENGINE IDLE SPEED

Manual Trans.: 1964, 600 rpm; 1965, 550 rpm
Auto. Trans. 500 rpm in DRIVE
Air Cond.: 1964, 550 rpm in DRIVE; 1965 Manual Trans. 600 rpm, Auto. Trans. 550 rpm in DRIVE; unit turned OFF and idle compensator held closed (Dealer installed unit turned ON)

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . Quarts

	With Heater	Without Heater
All models with air conditioning . .	19¼	18½
All other models	17	16¼

Cooling system pressure, 15 pounds

★ **Battery** . . . . Test and fill

Manual Steering Gear . . . . Check level
★ 1964 . . . . 80 MP
36 1965 CL
Fill thru top cover cap screw marked "Check Lube"

★ **Power Steering Reservoir** . . . . AF, PS
Fill to level mark, fluid at operating temperature

Air Cleaner Element . . . . Service
18 Dry type . . . . Replace
Severe service, replace more often
With closed PCV system, wash and oil wire gauze filter, located inside air cleaner housing, every 6,000 miles

Crankcase Dipstick . . . . Check level

★ **Brake Master Cylinder** (cap) . . . . HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage . . . . . . (8 or 12 fittings) CL
6 1964 6M 1965

★ **Clutch Release Bell Crank** (felt) . . . . MO

TRANSMISSION, Manual . . 80 MP

★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 4-speed, 2¼ pints
DRAIN and REFILL Not recommended

24 **Speedometer Cable** . . . . Coat lower ⅔ SP

C **Parking Brake Cables** . . . . Coat LM

DIFFERENTIAL . . . . 90 MP*

★ Maintain level to fill plug hole
CAPACITY 1964, 2¾ pints; 1965, 3 pints
DRAIN and REFILL Not recommended
ANTI-SPIN IDENTIFICATION:
Lubrication tag attached to rear cover

GAS TANK . . . . Gallons

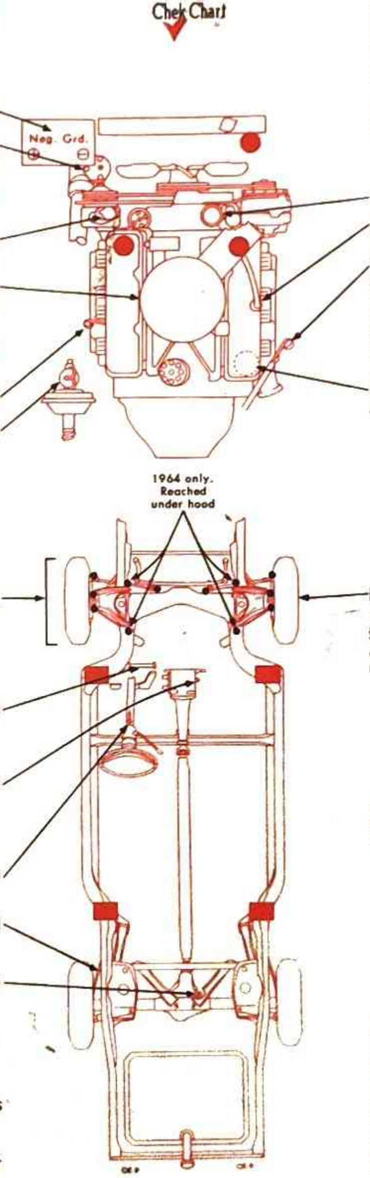
All models 20

TIRES

Pressure	Front	Rear
7.00-14, 7.50-14	24	24*
7.35-14, 7.75-14, 7.75-15	24	24†‡

* Station wagons carrying heavy loads, 28
† Station wagon, 28
‡ When carrying heavy loads, maximum inflation 30 pounds; 8-ply tires, 40 pounds

6 Rotate tires, Method A



■ Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W‡	5W-20,5W-30

* 30 may be used above +90°
‡ 5W not recommended for sustained high speed above +60°

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap . . . . Wash and oil 10W-30 MO ★

PCV System . . . . Clean 12
Disassemble and clean all parts

TRANSMISSION, Automatic . . AF

Check level, engine idling at operating temperature, PARK position . . . . ★
CAPACITY Refill approx. 3 quarts
DRAIN and REFILL 24
Remove oil pan
Replace transmission filter at time of drain
Severe service, drain every 12,000 miles

Oil Filter (under car) . . . . Replace 6
Add extra quart oil

Front Wheel Bearings . . . . Repack WB C
Initial torque, 25-30 ft. lb.; back off nut ½ turn and retighten nut finger-tight, reinstall retainer. Torque adjustments should be made with the wheel turning at least 3 times the speed of nut rotation

BRAKE ADJUSTMENT

Brakes are self-adjusting. DO NOT attempt to manually adjust the brakes on these cars
Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

- ★ Every crankcase oil change
- 6 Every 6,000 miles or 6 months
- 6M Every 6 months or 12,000 miles
- 12 Every 12,000 miles or 12 months
- 18 Every 18,000 miles or 18 months
- 24 Every 24,000 miles or 24 months
- 36 Every 36,000 miles
- C Conditional service
  - Coat parking brake cables and brake backing plate shoe contacts at time of major brake service
  - Repack front wheel bearings at time of major brake service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A Power Steering Reservoir: If more than 1 pt. of fluid is required, use PS
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
PS	Power Steering Fluid GM Part No. 1050017
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease

* Standard differential, MP meeting Specification MIL-L-2105B or special lubricant Part No. 1050081; Anti-Spin differential, special lubricant Part No. 1050081

1960

1961

PLYMOUTH 6

1960-61 All Models
Except Valiant

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1960	24H 27H	50 70
1961	24H 27H	50 70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	130	160*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-12Y
Gap: .035"
Torque: 30 ft. lb.

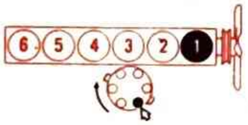
IGNITION POINTS

Autolite, 1960; Chrysler, 1961
Gap: .017"-.023"
Dwell angle: 1960, 36 -42 ; 1961, 40 -45°

CONDENSER

Autolite, 1960; Chrysler, 1961
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

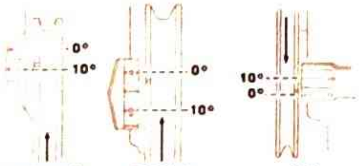


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1960 early 1960 late 1961

Timing Setting (Before Top Dead Center):
Manual Trans. 2½°; Auto. Trans. 5°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

BALL & BALL	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BBS	1	index	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto Trans. 500 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
1960	14	13
1961	13	12

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to level mark on gage. Without gage, to base of filler neck when cold, halfway when hot

★ **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Generator** (2 oil cups) .... MO
Alternator, right side, no lubrication

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH

Air Cleaner Element .... Service
5 Dry type .... Clean
15 Dry type .... Replace

★ **Manual Steering Gear** (plug) .... MP
Above -10°, 90; below -10°, 80; below -30°, 75

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

★ **Gearshift Rod Shift Levers** CL

★ **Torque Shaft** CL

TRANSMISSION, Manual .... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints; refill approx., 4 pints
20 DRAIN and REFILL

10 **Gearshift Lever** .... WG
Remove rubber boot below steering wheel, pivot-pin assembly, then lever. Coat sparingly ball end of lever, pivot-pin hole and surrounding area. Reassemble

20 **Universal Joints** .... Repack UJ
Use only 2 ounces in front joint

DIFFERENTIAL .... MP•

Above -10°, 90; below -10°, 80; below -30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 3½ pints
20 DRAIN and REFILL
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

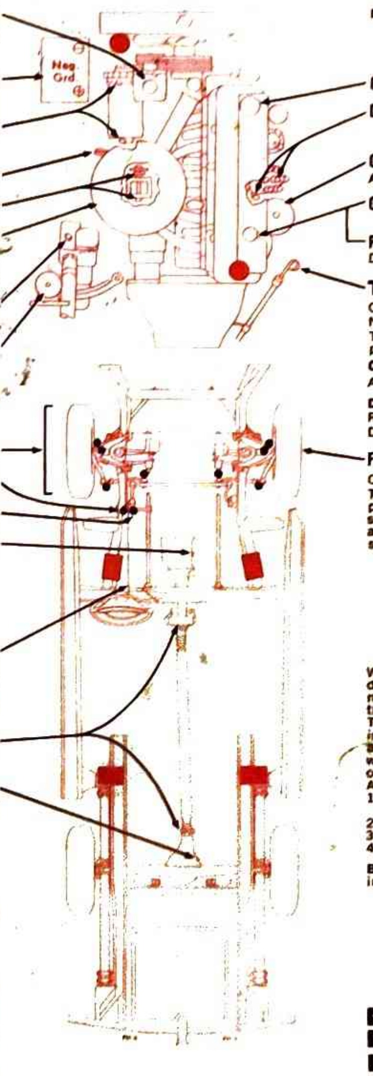
	Gallons
Suburban	21
Optional for fleets	23
All other models	20

TIRES

Pressure	Front	Rear
7.00-14	24	24
7.50-14	22	22*
8.00-14	24	24◆

* Station wagon, 24; with heavy load, 28
◆ Heavy load, 28
For Captive-Air tires inner chamber pressure must be 4 to 6 pounds higher than outer chamber pressure shown

6 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C



🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above -10°	10W	10W-30, 5W-20
Below -10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO ★

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO 10

Oil Filter .... Replace 4
Add extra quart oil

Crankcase Breather Outlet Element .... Wash and oil 30 MO ★
PCV System Valve .... CC 10
Disassemble and clean

TRANSMISSION, Automatic AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below -10°, replace ¼ quart fluid with kerosine

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL 10
Remove 1 converter plug and transmission plug
Drain more frequently under severe service

Front Wheel Bearings .... Check WB 10
Clean and repack if necessary
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in opposite direction
Adjust the brakes as follows:
1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

★	Every 2,000 miles
4	Every 4,000 miles
5	Every 5,000 miles
6	Every 6,000 miles
10	Every 10,000 miles
15	Every 15,000 miles
20	Every 20,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP•	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

• For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH 6

1962-63 All Models Except Valiant

1962

1963

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
All	24H	48, 59

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)

All 110-140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: 1962, N-12Y; 1963, N-14Y*
Gap: .035"
Torque: 30 ft. lb.
* 1963, gasket not required

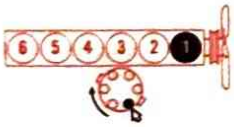
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

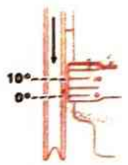


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 1-bbl. BBS	1	2 rich*	2 rich*
HOLLEY 1-bbl. R	1	index**	index**
STROMBERG 1-bbl. WA3	¾-1	—	2 rich

* 1963, 4 rich
** 1963, 2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
intake .010", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13	12

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

16 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... MH

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. On carburetor body, rear. Apply cleaner while moving choke valve back and forth

★ **Manual Steering Gear** (plug) .... SG, LM

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

32 **Automatic Trans. Filter** (under car) ..... Replace
Replace at time of transmission drain

PCV System Valve CC
Remove and clean valve; also hose and carburetor, if passages are clogged
TY 1963 8 1962
Service more frequently under severe service

8 **Crankcase Breather Outlet Element** 1962 .... Wash and oil 30 MO

Front Suspension .... (4 plugs) BJ
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when lubricating, remove plug, use special gun or adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... LM
Disassemble, clean and repack at both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL
1963 Not recommended
32 1962

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963 32 1962
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

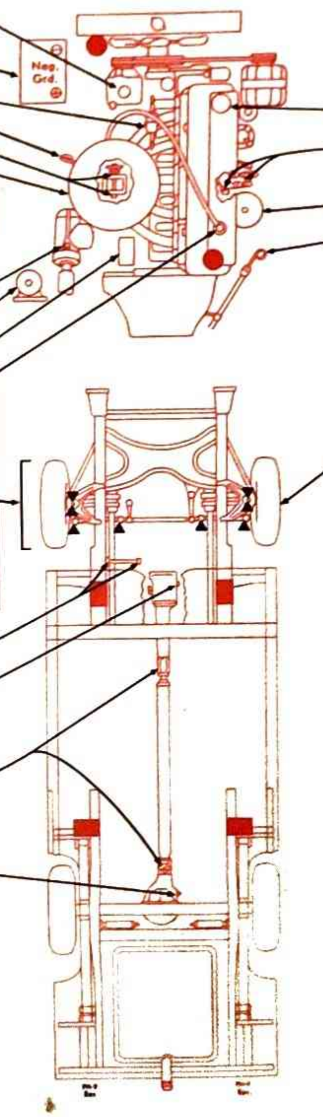
	Gallons
Suburban	21½
Optional for fleets	23
All other models	20

TIRES

Pressure	Front	Rear
6.50-14	24	24
6.70-15	24	24*
7.00-14, 1962	24	24**
7.00-14, 1963	24	22◆
7.50-14	24	22◆

*Station wagon with heavy load, 28
** Station wagon, 28
◆ Station wagon, 26; with heavy load, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 MO
1962 8 1963 OC

Distributor Shaft (oil cup) .... MO ★
Wick under rotor .... Sparingly MO
1962 12 1963 TY

Oil Filter .... Replace ★
Add extra quart of oil

TRANSMISSION, Automatic .. AF ★

Check level, engine idling, NEUTRAL position
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... WB
Inspect 16
1963, clean and repack C
1962, clean and repack 32

Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

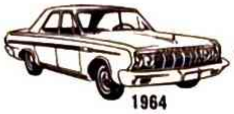
- ★ 1963, Twice yearly
  1962, Every 4,000 miles
- 5 Every 5,000 miles
- 8 Every 8,000 miles
- 12 Every 12,000 miles
- 16 Every 16,000 miles
- 32 Every 32,000 miles
- OC Every crankcase oil change
- TY Twice yearly
- C Conditional service
  1963, drain and refill differential for below −10° requirements
  1963, clean and repack front wheel bearings if wheel is removed for service

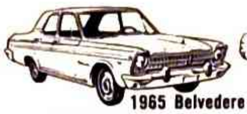
FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

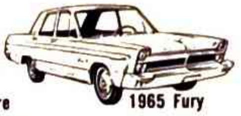
KEY TO LUBRICANTS

Code	Lubricant
AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318


1964


1965 Belvedere


1965 Fury

HOOD RELEASE: Front

PLYMOUTH 6

1964-65 All Models Except Valiant

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H 24H	48 70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30 ft. lb.

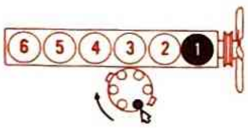
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

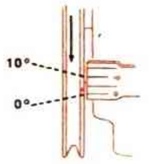


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½

FUEL PUMP

Carter model MS-3674S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 1-bbl. BBS	1	2 rich	2 rich
HOLLEY 1-bbl. R	1	2 rich	2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	13	12

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... **PS**
Fill to base of filler neck when cold, halfway when hot

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

Fuel Filter .... Replace
16 1964 20 1965

Crankcase Dipstick .... Check level

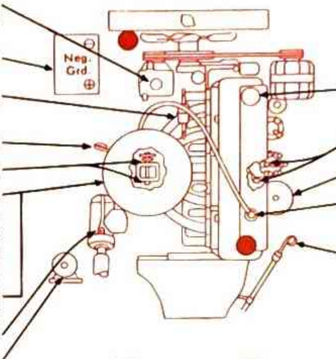
★ **Manifold Heat Control Valve Shaft** .... **MH**

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 **MO**

★ **Carburetor Choke Shaft** .... Clean **CC**
In carburetor air horn. Remove air cleaner to service

★ **Manual Steering Gear** (plug) .... 90 **MP**

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir



Front Suspension and Steering Linkage .... (8 or 9 plugs) **BJ**

★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate

32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... **LM**
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles

CAPACITY 5 pints
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

DIFFERENTIAL .... MP*

Above –10°, 90; below –10°, 80; below –30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 4 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

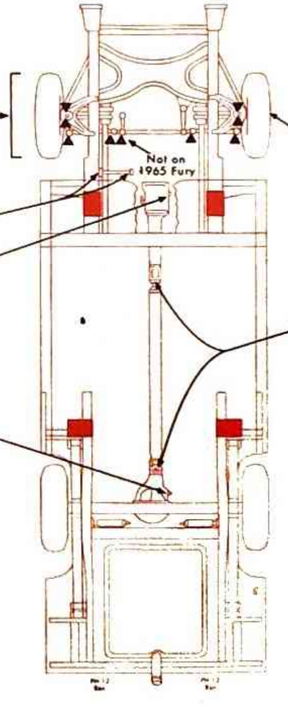
Station Wagons ex. 1965 Fury	21
All other models ex. 1965 Fury	19
1965 Fury	25
Station Wagon	22

TIRES .... Pressure

	Front	Rear
6.70-15	24	24
7.00-14, 7.50-14	22‡	22*
7.35-14, 7.75-14, 8.25-14	22●‡	22†

* Station wagons, 26; fully loaded, 30
● 1965 Fury, 24
† Station wagons, 26; fully loaded, 32
‡ With air conditioning, 24

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40,10W-30
Above +10°	10W	10W-30
Above –10°	10W	10W-30,5W-20
Below –10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 **MO** ★
Service more frequently under dusty conditions

Distributor Shaft (oil cup) .... **MO** ★
Wick under rotor .... Sparingly **MO** ★

Oil Filter .... Replace 0C
Add extra quart oil

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below –10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... **WB, LM**
Inspect 20
Severe service, inspect every 10,000 miles
Repack C

Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joints .... **UJ**
Front, 2 ounces, grade 2; rear, grade 0
Inspect for leaks, replace seals if necessary ..... ★
Severe service, inspect every 2 months or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Twice yearly
5 Every 5,000 miles
16 Every 16,000 miles or yearly
20 Every 20,000 miles or 2 years
32 Every 32,000 miles
0C Every other crankcase oil change
Y Yearly
2Y Every 2 years or 32,000 miles
C Conditional service
Drain and refill differential for below –10° requirements
Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH V-8

1960-61 All Models

1960

1961

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1960 with Commando eng.	24H	60
Others	24H	50
	27H	• 70
1961	24H	59
	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
1960 with Commando engine	150	180*
1961 with 383 Commando engine	150	180*
Others	135	165**

* Maximum variation between cylinders, 25 psi
** Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: Commando engine, J-9Y; others, J-12Y
Gap: .035"
Torque: 30 ft. lb.

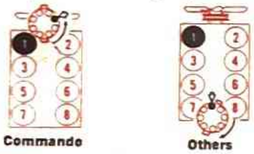
IGNITION POINTS

Autolite: All 1960, 1961 with Commando engine; Chrysler, other 1961
Gap: .014"-.019"
Dwell angle: Single or dual points, 27°-32°; dual points, total dwell, 38°-40°

CONDENSER

Autolite: All 1960, 1961 with Commando engine; Chrysler, other 1961
Capacity: .25-.285 mfd

Cylinder Numbering Sequence



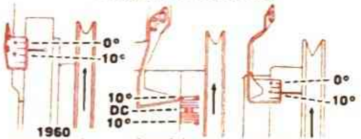
Commando — Others

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



1960 Commando — 1960 Others — 1961

Timing Setting (Before Top Dead Center):

318 engine with Manual Trans.	5°
1960 with two carburetors	5°
1961 with 383 engine	7½°
Others	10

FUEL PUMP

Carter model: 318 engine, M-2608S; with Air Cond., M-2611S; Commando engine, M-2769S
Pressure: M-2769S, 3½-5 lb. at 500 rpm; others, 5-7 lb. at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2-bbl. BBD	1	index	index
CARTER			
4-bbl. AFB-2903S	1½	1 rich	1 rich
4-bbl. AFB-2968S, -3133S	1½	2 rich	2 rich
Other AFB	1½	index	index
STROMBERG			
2-bbl. WW15	1¼	index	index

ENGINE IDLE SPEED

Manual Trans. 500* rpm, headlights on high beam
Auto. Trans. 500* rpm in NEUTRAL with headlights on high beam
Air Cond. 550* rpm in NEUTRAL with unit turned ON and headlights on high beam
* With (2) 4-bbl. carburetors, 750 rpm

VALVE CLEARANCES

(engine hot and running)
Commando eng.: Hydraulic lifters, nonadjustable
318 engine, 1960 Intake .010"; exhaust .018"
1961 Intake .013"; exhaust .021"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
Commando engine	17	16
All other models	21	20

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to level mark on gage. Without gage, to base of filler neck when cold, halfway when hot

★ **Oil Fill Cap** .... Wash and oil 30 MO

Air Cleaner Element .... Service
5 Dry type .... Clean
15 Dry type .... Replace

★ **Manual Steering Gear** (plug) .... MP
Above -10°, 90; below -10°, 80; below -30°, 75

★ **Distributor Shaft** (oil cup) .... MO
Commando engine, right side front
10 Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Front Suspension and Steering Linkage** .... (8 fittings) CL

★ **Gearshift Rod Shift Levers** CL

★ **Torque Shaft** CL

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY: Early 1960 2¾ pints; 1961, late 1960 5 pints, refill approx. 4 pints. With Commando engine, 1960 3½ pints; 1961 4¼ pints, refill approx. 3½ pints
20 **DRAIN and REFILL**

10 **Gearshift Lever** .... WG
Remove rubber boot below steering wheel, pivot-pin assembly, then lever. Coat sparingly ball end of lever, pivot-pin hole and surrounding area. Reassemble

20 **Universal Joints** .... Repack UJ
Use only 2 ounces in front joint

DIFFERENTIAL .... MP*

Above -10°, 90; below -10°, 80; below -30°, 75
★ Maintain level ½ inch below fill plug hole
CAPACITY 4 pints
20 **DRAIN and REFILL**
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK

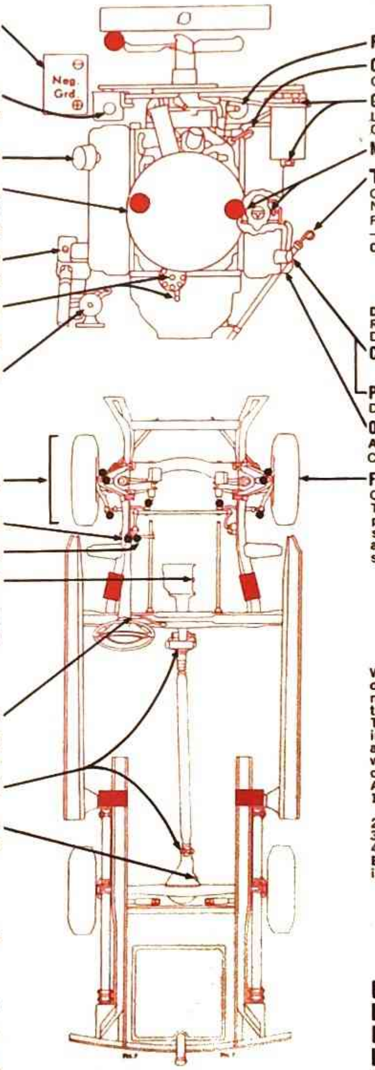
	Gallons
Suburban	21
Optional for fleets	23
All other models	20

TIRES

Pressure	Front	Rear
7.50-14	24	22*
8.00-14	22◆	22*

* Station wagon, 24; with heavy load, 28
◆ Station wagon, 24
For Captive-Air tires inner chamber pressure must be 4 to 6 pounds higher than outer chamber pressure shown

6 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C



🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above -10°	10W	10W-30, 5W-20
Below -10°		5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element .... Replace 23

Crankcase Dipstick .... Check level
Commando engine, left side

Generator (2 oil cups) .... MO ★
Left side on air-conditioned models, except with Commando engine. Alternator, no lubrication

Manifold Heat Control Valve Shaft .... MH ★

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
PowerFlite: To overcome difficult starting below -10°, replace 1 quart fluid with kerosine

CAPACITY, quarts	Initial Refill	Total Refill
PowerFlite	5	10
TorqueFlite		
Golden Commando engine	5	10½
All other models	5	9

DRAIN and REFILL 10
Remove 1 converter plug and disconnect fill pipe
Drain more frequently under severe service

Crankcase Breather Outlet Element .... Wash and oil 30 MO ★

PCV System Valve .... CC 10
Disassemble and clean

Oil Filter (under car) .... Replace 4
Add extra quart oil
Commando engine, left side front

Front Wheel Bearings .... Check WB 10
Clean and repack if necessary
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake rear cam in opposite direction
Adjust the brakes as follows:
1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF When bleeding front brakes, bleed lower cylinder first

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
5 Every 5,000 miles
6 Every 6,000 miles
10 Every 10,000 miles
15 Every 15,000 miles
20 Every 20,000 miles
23 Every 23,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH V-8

1962-63 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include racing-type engines)

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H	48, 59

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
1962 318 engine	120	150*
1963 318 engine	120	155*
1962-63 361 engine	125	155*
1962-63 383 eng. Manual Trans.	150	180**
1962-63 383 engine Automatic Trans.	130	165**

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion: 383 eng. with 4-bbl. carb., J-9Y; others, J-12Y
Gap: .035"
Torque: 30 ft. lb.

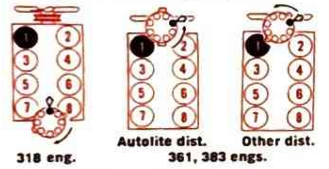
IGNITION POINTS

Autolite, Chrysler, Prestolite
Gap: Autolite, Chrysler, .014"-.019"; Prestolite, .015"-.018"
Dwell angle: 1963 single points, Autolite, Chrysler, 28°-33°; Prestolite, 26°-32°; 1962 single points, 1962-63 each set of dual points, 27°-32°; dual points total dwell, 34°-40°

CONDENSER

Autolite, Chrysler, Prestolite
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

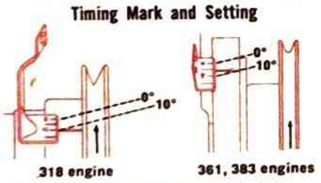


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):

318 engine: Manual Trans.	5°
Auto. Trans.	10°
4-bbl. carburetor	10°
361, 383 engines	10°

FUEL PUMP

Carter model: 318 engine, M-2608S; with Air Cond., M-2611S; 361, 383 engines, M-2769S
Pressure: M-2769S, 3½-5 lb.; others, 5-7 lb.; at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 2-bbl. BBD	1*	index	index*
CARTER 4-bbl. AFB	1½	2 rich**	2 rich**
STROMBERG 2-bbl. WW3	1¼	index	index

* 1963, 383 eng., ¾ turn idle mixture; 2 rich choke setting
** 1963, index

ENGINE IDLE SPEED

Manual Trans. 500 rpm, headlights on high beam
Auto. Trans. 500 rpm in NEUTRAL with headlights on high beam
Air Cond. 500 rpm in NEUTRAL with unit turned ON and headlights on high beam

VALVE CLEARANCES

(engine hot and running)
318 engine: intake .013"; exhaust .021"
361, 383 engines: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
318-cu. in. engine	21	20
361-, 383-cu. in. engines	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck when cold, halfway when hot

Oil Fill Cap .... Wash and oil 30 MO
OC 1963 **8** 1962

32 **Automatic Trans. Filter** (under car) .... Replace
Replace at time of transmission drain

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace

TY **Carburetor Choke Piston** CC
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Manual Steering Gear** (plug) .... SG, LM

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

★ **Distributor Shaft** (oil cup) .... MO
361-, 383-cu. in. engines, right side front
Wick under rotor .... Sparingly MO
TY 1963 **12** 1962

Front Suspension .... (4 plugs) BJ
★ Inspect seal, if damaged, replacement is necessary. After replacing seal or when relubricating, remove plug, use special gun or proper adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual

★ Maintain level to fill plug hole
3-speed .... AF
CAPACITY 5 pints
4-speed .... MP, AF
Above +32°, 80MP; below +32°, AF
90MP may be used if 80 is not available
CAPACITY 3 pints
DRAIN and REFILL
1963 Not recommended
32 1962

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to ½ inch below fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
C 1963 **32** 1962
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

Suburban	21½
Optional for fleets	23
All other models	20

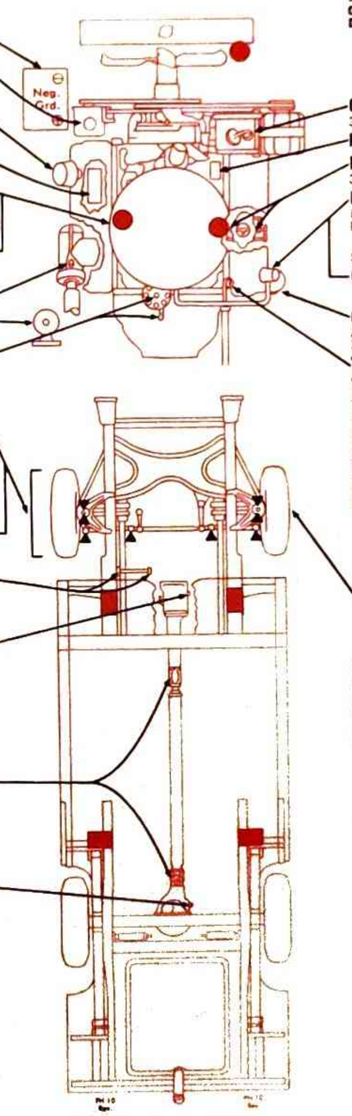
TIRES

Pressure	Front	Rear
6.70-15	24	24*
7.00-14	24	22**
7.50-14	24	22**

* Station wagon with heavy load, 28
** Station wagon, 26; with heavy load, 28

Rotate tires, Method A, then balance wheels
5 1963 **8** 1962

Chek Chart



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level
361-, 383-cu. in. engines, left side

Fuel Filter .... Replace **16**

Manifold Heat Control Valve Shaft .... MH ★
361-, 383-cu. in. engines, at rear of manifold

PCV System Valve CC
Remove and clean valve; also hose and carburetor, if passages are clogged
1962 **8** 1963 **TY**
Service more frequently under severe service

Crankcase Breather Outlet Element 1962 .... Wash and oil 30 MO **8**

Oil Filter (under car) .... Replace ★
Add extra quart oil
361-, 383-cu. in. engines, left side front

TRANSMISSION, Automatic .... AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 .... **32**

Front Wheel Bearings .... WB
Inspect **16**
1963, clean and repack .... **C**
1962, clean and repack **32**
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter pin
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1963, Twice yearly
1962, Every 4,000 miles
5 Every 5,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
16 Every 16,000 miles
32 Every 32,000 miles
OC Every crankcase oil change
TY Twice yearly
C Conditional service
1963, drain and refill differential for below −10° requirements
1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH V-8

1964-65 All Models Except Valiant

1964

1965 Belvedere

1965 Fury

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include racing-type engines)

BATTERY

	AABM Group No.	Amp. Hrs.
273, 318 engines	24H	48
361 engine	24H	59
383, 426 engines (1964)	24H	59
	27H	70
383, 426 engines (1965)	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
273 engine	120	150*
318 engine	125	155*†
361, 383 2-bbl. carb. engines (1964)	130	165**
361, 383 2-bbl. carb. engines (1965)	125	155*
383 4-bbl. carb., 426 engines	130	165**

Maximum variation between cylinders:
*20 psi; **25 psi; †1964 20 psi; 1965 25 psi

SPARK PLUGS

1964 Champion, 383 eng. with 4-bbl. carb., 426 engine J-10Y; others J-12Y
1965: 273 engine, Champion N-14Y or MoPar P-6-6P
318, 361, 383 engines, Champion J-14Y or MoPar P-3-6P
426 engine, Champion J-10Y or MoPar P-3-3P
Gap: .035" Torque: 30 ft. lb.

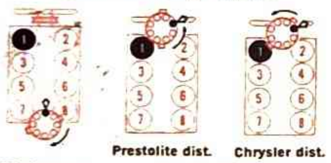
IGNITION POINTS

Chrysler, Prestolite Gap: .014"-.019"
Dwell angle: 1964: Single points 28°-33°; each set of dual points 27°-32°, total dwell 34°-40°
1965: Single points 28°-32°*; each set of dual points 27°-31°, total dwell 36°-40°
* 273, 318 engines, 28°-33°

CONDENSER

Chrysler, Prestolite Capacity: .25-.285 mfd

Cylinder Numbering Sequence



Prestolite dist. Chrysler dist.

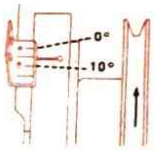
273, 318 engs. 361, 383, 426 engs.

Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten clamp screw, recheck timing
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
273, 318 engines: Manual Trans. 5°; Auto. Trans. 10°
Others: 10°

FUEL PUMP

Carter model: 273, 318 engines, MS-3673S; 361, 383, 426 engines, MS-3672S
Pressure: MS-3673S, 5-7 lb.; MS-3672S, 3½-5 lb.; at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
2 bbl. BBD			
273, 318 engs.	1	index	index
361, 383 engs.	¾	2 rich	2 rich
CARTER			
4-bbl. AFB	1-2	index*	index*
STROMBERG			
2-bbl. WW3	1¼	index	index
2-bbl. WWC3	1½	1 rich	1 rich

* 1965: 383 engine, 2 rich

ENGINE IDLE SPEED

Manual Trans. 500 rpm*, headlights on high beam
Auto. Trans. 500 rpm* in NEUTRAL with headlights on high beam
Air Cond. 500 rpm* in NEUTRAL with unit turned ON and headlights on high beam
* 1965: 383 Hi-Perf., 426 engines, 550 rpm

VALVE CLEARANCES

(engine hot and running)
273, 318 engines. Intake .013"; exhaust .021"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
273-cu. in. engine	18	17
318-cu. in. engine	21	20
361-, 383-, 426-cu. in. engines	17	16

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Oil Fill Cap** .... Wash and oil 30 MO
Service more frequently under dusty conditions

★ **Carburetor Choke Shaft** .... Clean CC

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system and for high performance engine, clean element at each crankcase oil change; replace yearly
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 MO

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Distributor Shaft** (oil cup) .... MO
361-, 383-, 426-cu. in. engines, right side front
★ Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual

3-speed .... AF
3-speed H.D. .... MP, AF
Above +32°, 80MP; below +32°, AF
4-speed .... 140 MP
Use 90 or 80 for cold weather operation
★ Maintain level to fill plug hole
Severe service, check every 2 mo. or 4,000 miles
CAPACITY 3-speed: H.D. **2½ pints,** others **3½** pints; 4-speed **6½** pints
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ½ inch below fill plug hole
Severe service, check every 2 mo. or 4,000 miles
CAPACITY 4 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

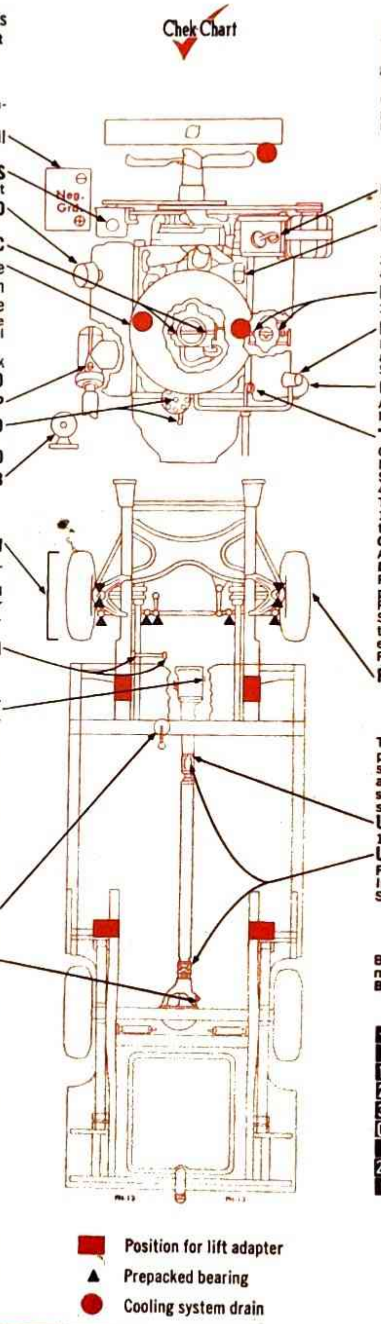
Station Wagons ex. 1965 Fury	21
All other models ex. 1965 Fury	19
1965 Fury	25
Station Wagon	22

TIRES .... Pressure

	Front	Rear
6.70-15	24	24
7.00-14, 7.50-14	24*	22*
7.35-14, 7.75-14, 8.25-14, 8.55-14	24†	22†

* Station wagons, front **22**, rear **26**; fully loaded, rear, add 4 pounds
† Station wagons, front **22**, rear **26**; fully loaded, rear, add **6** pounds

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts except 1964 426-cu. in. engine, **5 quarts**
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level
361-, 383-, 426-cu. in. engines, left side

Fuel Filter .... Replace
1964 16 1965 20
361-, 383-, 426-cu. in. engines, front of engine above fuel pump

Manifold Heat Control Valve Shaft .... MH ★
361-, 383-, 426-cu. in. engines, at rear of manifold

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

Oil Filter (under car) .... Replace OC
Add extra quart oil. 361-, 383-, 426-cu. in. engines, left side front

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 90 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

Universal Joint Spline .... Coat evenly BJ C
1965 models with automatic transmission only

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
Inspect for leaks, replace seals if necessary ..... ★
Severe service, inspect every 2 mo. or 4,000 miles
Repack if used under severe service 32

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Twice yearly
5 Every 5,000 miles
16 Every 16,000 miles or yearly
20 Every 20,000 miles or 2 years
32 Every 32,000 miles
OC Every other crankcase oil change
Y Yearly
2Y Every 2 years or 32,000 miles
C Conditional service
  Lubricate gearshift lever as required
  Drain and refill differential for below −10° requirements
  Repack front wheel bearings as required or at brake overhaul
  Coat universal joint spline when repacking joints

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

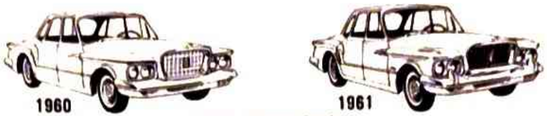
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH-VALIANT

1960-61 All Models



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
1960	24H	50
	27H	70
1961	24H	50
	27H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	130	160*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-12Y
Gap: .035"
Torque: 30 ft. lb.

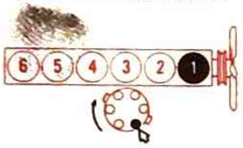
IGNITION POINTS

Autolite, 1960; Chrysler, 1961
Gap: .017"-.023"
Dwell angle: 1960, 36°-42°; 1961, 40°-45°

CONDENSER

Autolite, 1960; Chrysler, 1961
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

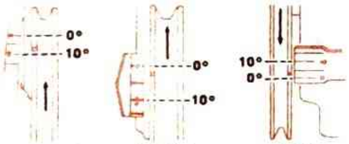


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1960 early 1960 late 1961

Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

BALL & BALL	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BBS	1	index	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 500 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and with headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater	Without Heater
All models	12	11

Cooling system pressure, 14 pounds

★ **Power Steering Reservoir** ....PS
Fill to level mark on gage. Without gage, to base of filler neck when cold, halfway when hot

★ **Battery** ....Test and fill
Caution: Do not ground positive terminal

Crankcase Dipstick ....Check level

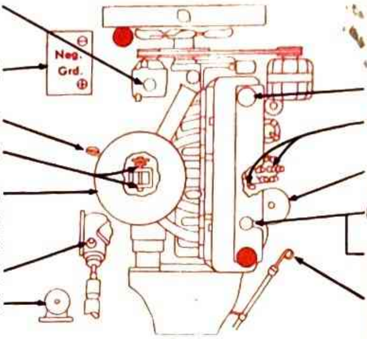
★ **Manifold Heat Control Valve Shaft** ....MH
Not on Hyper Pack engine

Air Cleaner Element ....Service
5 Dry type ....Clean
15 Dry type ....Replace

★ **Manual Steering Gear** (plug)..............SG

★ **Brake Master Cylinder** (plug).............HB
Fill to ¼ inch below top of fill hole

Chek-Chart



CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts; Hyper Pack engine with oil cooler, 4¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap ....Wash and oil 30 MO ★

Distributor Shaft (oil cup)................MO ★
Wick under rotor..........Sparingly MO 10

Oil Filter ....Replace 4
Add extra quart oil

Crankcase Breather Outlet Element.......Wash and oil 30 MO ★
PCV System Valve.........................CC 10
Disassemble and clean

TRANSMISSION, Automatic..AF

Check level, engine idling and thoroughly warm, NEUTRAL position ★
To overcome difficult starting below −10°, replace ¾ quart fluid with kerosine

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL.............................10
Remove 1 converter plug and transmission plug
Drain more frequently under severe service

★ **Front Suspension and Steering Linkage**..........(9 fittings) CL

★ **Torque Shaft** CL

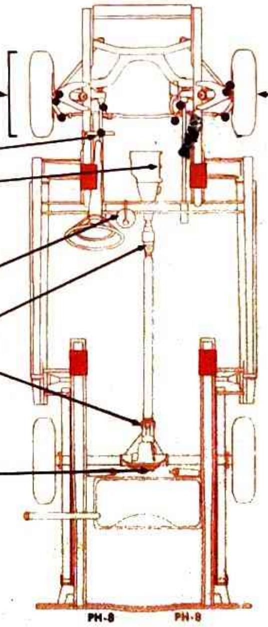
TRANSMISSION, Manual .....AF

★ Maintain level to fill plug hole
CAPACITY 5 pints, refill approx. 4 pints
20 **DRAIN and REFILL**

10 **Gearshift Lever** ....MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

20 **Universal Joint**.........Repack, 2 oz. only UJ

20 **Universal Joint**.................Repack UJ



DIFFERENTIAL ....MP

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to fill plug hole
CAPACITY 2 pints
20 **DRAIN and REFILL**

GAS TANK ....Gallons

All models 13

TIRES ....Pressure	Front	Rear
6.50-13	24	24*

* Suburban: 3-seat, 2-seat fully loaded, 28
For Captive-Air tires inner chamber pressure must be 4 to 6 pounds higher than outer chamber pressure shown

6 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C

Front Wheel Bearings.............Check WB 10
Clean and repack if necessary
Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Using a suitable tool inserted into rear adjustment hole in backing plate, expand shoes until light drag is felt when rotating wheel
2. Back off adjustment 10-12 notches or until all drag is eliminated
3. Repeat steps 1 and 2 for each brake

Bleeding sequence: RR, LR, RF, LF

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

- ★ Every 2,000 miles
- 4 Every 4,000 miles
- 5 Every 5,000 miles
- 6 Every 6,000 miles
- 10 Every 10,000 miles
- 15 Every 15,000 miles
- 20 Every 20,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

PLYMOUTH-VALIANT

1962-63 All Models

1962

1963

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	20H 24H	38 48

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion: 1962, N-12Y; 1963, N-14Y*
Gap: .035"
Torque: 30 ft. lb.
* 1963, gasket not required

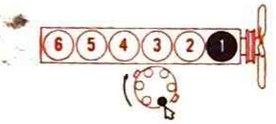
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

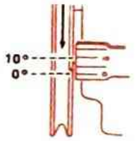


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½°

FUEL PUMP

Carter model M-2996S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle, Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich*	2 rich*
HOLLEY			
1-bbl. R	1	index**	index**
STROMBERG			
1-bbl. WA3	¾-1	—	2 rich

* 1963, 4 rich
** 1963, 2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and with headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010"; exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Super 225-cu. in. engine	13	12
All other models	12	11

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... **PS**
Fill to base of filler neck when cold, halfway when hot

OC **Battery** .... Test and fill
Caution: Do not ground positive terminal

16 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... **MH**

Air Cleaner Element .... Service
8 Dry type .... Clean
32 Dry type .... Replace

TY **Carburetor Choke Piston** .... **CC**
Remove air cleaner to service. Apply cleaner while moving choke valve back and forth

★ **Manual Steering Gear** (plug) .... **SG, LM**

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

32 **Automatic Trans. Filter** (under car) ..... Replace
Replace at time of transmission drain

PCV System Valve .... **CC**
Remove and clean valve; also hose and carburetor, if passages are clogged
TY 1963 8 1962
Service more frequently under severe service

8 **Crankcase Breather Outlet Element** 1962 .... Wash and oil 30 **MO**

Front Suspension .... (4 plugs) **BJ**
★ Inspect seal. if damaged, replacement is necessary. After replacing seal or when lubricating, remove plug, use special gun or adapter. Install plug
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

★ **Steering Linkage** .... (4 sealed bearings)
Inspect seal; if damaged or worn, replace entire pivot assembly

32 **Torque Shaft** .... **LM**
Disassemble, clean and repack at both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 5 pints
DRAIN and REFILL
1963 Not recommended
32 1962

Universal Joints .... **UJ**
Front, 2 ounces, grade 2; rear, grade 0
TY 1963 .... Inspect
Inspect for leaks, replace seals if necessary
32 1963, repack if used under severe service
32 1962, repack under all service conditions

DIFFERENTIAL .... MP

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL
C 1963 32 1962

GAS TANK .... Gallons

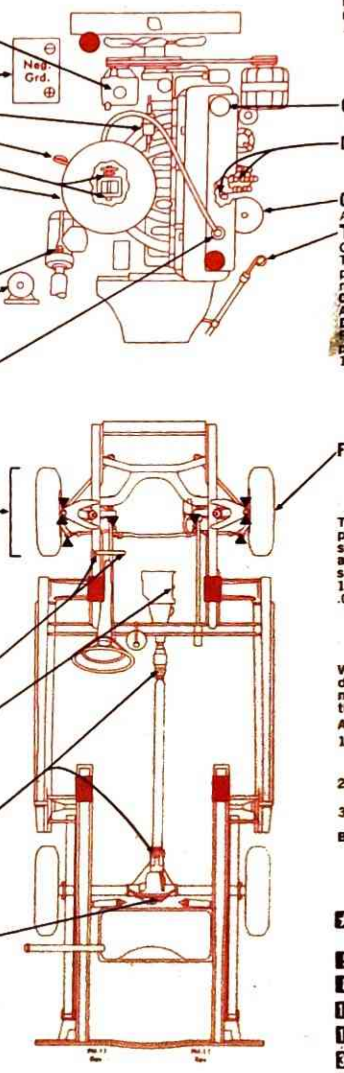
1963	18
1962	14

TIRES

Pressure	Front	Rear
6.50-13	24	24*

* Suburban: 3-seat, 2-seat fully loaded, 28

Rotate tires, Method A, then balance wheels
5 1963 8 1962



▬ Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30, 5W-20
Below −10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 **MO**
1962 8 1963 OC

Distributor Shaft (oil cup) .... **MO** ★
Wick under rotor .... Sparingly **MO**
1962 12 1963 TY

Oil Filter .... Replace ★
Add extra quart of oil

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position ... ★
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	7

DRAIN and REFILL
Remove 1 converter plug, transmission plug and parking sprag cavity plug; also, remove oil pan on 1963 without transmission plug
1963 Regular drain not recommended
Severe service drain every 32,000 miles; extremely severe service every 10,000 miles
Replace transmission filter at time of drain
1962 32

Front Wheel Bearings .... **WB**
Inspect 16
1963, clean and repack C
1962, clean and repack 32

Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjusting nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key
1963, final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Using a suitable tool inserted into rear adjustment hole in backing plate, expand shoes until light drag is felt when rotating wheel
2. Back off adjustment 10-12 notches or until all drag is eliminated
3. Repeat steps 1 and 2 for each brake

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★	1963, Twice yearly 1962, Every 4,000 miles
5	Every 5,000 miles
8	Every 8,000 miles
12	Every 12,000 miles
16	Every 16,000 miles
32	Every 32,000 miles
OC	Every crankcase oil change
TY	Twice yearly
C	Conditional service 1963, drain and refill differential for below −10° requirements 1963, clean and repack front wheel bearings if wheel is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

PLYMOUTH-VALIANT 6

1964-65 All Models

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
170 engine	20H	38
1965 optional	24H	48
225 engine	24H	48
	24H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	110	140*

* Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30 ft. lb.

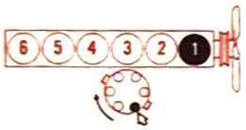
IGNITION POINTS

Chrysler
Gap: .017"-.023"
Dwell angle: 40°-45°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

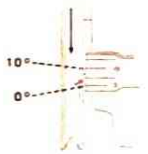


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 475-500 rpm, transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2½

FUEL PUMP

Carter model MS-3674S
Pressure: 3½-5 lb. at 500 rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich	2 rich
HOLLEY			
1-bbl. R	1	2 rich	2 rich

ENGINE IDLE SPEED

Manual Trans. 550 rpm with headlights on high beam
Auto. Trans. 550 rpm in NEUTRAL with headlights on high beam
Air Cond. 550 rpm in NEUTRAL with unit turned ON and with headlights on high beam

VALVE CLEARANCES

(engine hot and running)
Intake .010", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Super 225-cu. in. engine	13	12
All other models	12	11

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Power Steering Reservoir** .... **PS**
Fill to base of filler neck when cold, halfway when hot

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

Fuel Filter .... Replace
16 1964 20 1965

Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve Shaft** .... **MH**

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 **MO**

★ **Carburetor Choke Shaft** .... Clean **CC**
In carburetor air horn. Remove air cleaner to service

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **Manual Steering Gear** (plug) .... 90 **MP**

Front Suspension and Steering Linkage .... (9 plugs) **BJ**
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... **LM**
Disassemble, clean and repack both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 3-speed, **5 pints**; 4-speed, **6 pints**
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... **MO**
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

Universal Joints .... **UJ**
Front, 2 ounces, grade 2; rear, grade 0
★ Inspect for leaks, replace seals if necessary
Severe service, inspect every 2 months or 4,000 miles
32 Repack if used under severe service

DIFFERENTIAL .... MP*

Above –10°, 90; below –10°, 80; below –30°, 75
★ Maintain level ⅝ inch below fill plug hole (axle hoist); bottom of fill plug hole (frame hoist)
Severe service, check level every 2 months or 4,000 miles
CAPACITY 2 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

All models	18

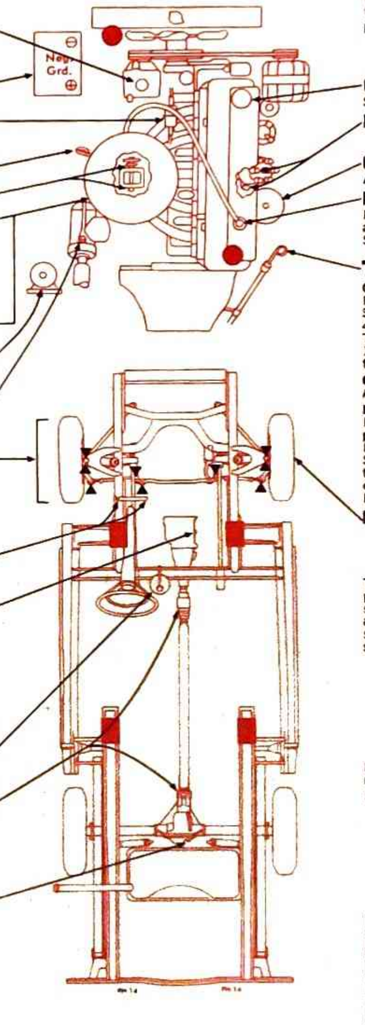
TIRES .... Pressure

	Front	Rear
6.50-13	24	24*
7.00-13	24	22†

* Station wagon, fully loaded, 28; Barracuda, 26
† Station wagon, 24; fully loaded, 28

5 **Rotate tires, Method A, then balance wheels**

Chek Chart



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40,10W-30
Above +10°	10W	10W-30
Above –10°	10W	10W-30,5W-20
Below –10°	...	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 **MO** ★
Service more frequently under dusty conditions

Distributor Shaft (oil cup) .... **MO** ★
Wick under rotor .... Sparingly **MO** ★

Oil Filter .... Replace OC
Add extra quart oil

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below –10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8

DRAIN and REFILL
Remove 1 converter plug and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... **WB, LM**
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Twice yearly
5 Every 5,000 miles
16 Every 16,000 miles or yearly
20 Every 20,000 miles or 2 years
32 Every 32,000 miles
OC Every other crankcase oil change
Y Yearly
2Y Every 2 years or 32,000 miles
C Conditional service
  Lubricate gearshift lever as required
  Drain and refill differential for below –10° requirements
  Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PLYMOUTH-VALIANT

1964-65 All Models

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H	48
	24H	70

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
1964: All	125	155*
1965: 2-bbl. carburetor	120	150*
4-bbl. carburetor	130	165**

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 25 psi

SPARK PLUGS

Champion N-14Y; MoPar P-6-6P
Gap: .035"
Torque: 30 ft. lb.

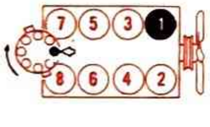
IGNITION POINTS

Chrysler
Gap: .014"-.019"
Dwell angle: 28°-33°; each set of dual points 27°-31°, total dwell 36°-40°

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

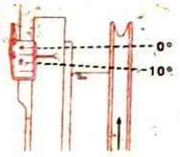


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
2-bbl. carb.: Manual Trans. 5°; Auto. Trans. 10°
4-bbl. carb.: 10°

FUEL PUMP

Carter model MS-3673S
Pressure: 5-7 lb. at idle rpm
Volume: 1 quart per minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL 2-bbl. BBD	1	index	index
CARTER 4-bbl. AFB	1-2	index	index
STROMBERG 2-bbl. WW3	1¼	index	index

ENGINE IDLE SPEED

Manual Trans. 500 rpm*, headlights on high beam
Auto. Trans. 500 rpm* in NEUTRAL with headlights on high beam
Air Cond. 500 rpm* in NEUTRAL with unit turned ON and headlights on high beam
* 4-bbl. carb. 600 rpm

VALVE CLEARANCES

(engine hot and running)
Intake .013"; exhaust .021"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1964	17	16
1965	18	17

Cooling system pressure, 14 pounds; with air conditioning, 16 pounds

★ **Battery** .... Check and fill
Caution: Do not ground positive terminal

★ **Power Steering Reservoir** .... PS
Fill to base of filler neck if cold, halfway when hot

★ **Carburetor Choke Shaft** .... Clean CC

Air Cleaner Element .... Service
★ Dry type .... Clean
2Y Dry type .... Replace
With closed PCV system and for high performance engines, clean element at each crankcase oil change; replace yearly
★ Oil bath .... Check
Y Oil bath .... Wash and fill 10W-30 MO

★ **Oil Fill Cap** .... Wash and oil 30 MO
Service more frequently under dusty conditions.

★ **Manual Steering Gear** (plug) .... 90 MP

★ **Distributor Shaft** (oil cup) .... MO

★ Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cover) .... HB
Fill to ¼ inch below top of reservoir

Front Suspension and Steering Linkage .... (9 plugs) BJ
★ Inspect seal; if damaged, replacement is necessary. After replacing seal, relubricate
32 Relubricate using special adapter. Fill until grease flows from upper ball joint bleed holes or lower joint seal lower lip. Do not rupture seals. Reinstall plug

32 **Torque Shaft** .... LM
Disassemble, clean and repack both ends

TRANSMISSION, Manual

3-speed .... AF
4-speed .... 140 MP
Use 90 or 80 for cold weather operation
★ Maintain level to fill plug hole
Severe service, check level every 2 months or 4,000 miles
CAPACITY 3-speed, 1964 **5 pints**, 1965 **4 pints**; 4-speed, **6 pints**
DRAIN and REFILL
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter

C **Gearshift Lever** .... MO
Remove rubber boot from floor panel, apply lubricant to pivot points and yoke selector mechanism

Universal Joints .... UJ
Front, 2 ounces, grade 2; rear, grade 0
★ Inspect for leaks, replace seals if necessary
Severe service, inspect every 2 months or 4,000 miles
32 Repack if used under severe service

DIFFERENTIAL .... MP*

Above −10°, 90; below −10°, 80; below −30°, 75
★ Maintain level ⅝ inch below fill plug hole (axle hoist); bottom of fill plug hole (frame hoist)
Severe service, check level every 2 months or 4,000 miles
CAPACITY 2 pints
DRAIN and REFILL
C Normal service 32 Severe service
SURE-GRIP IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

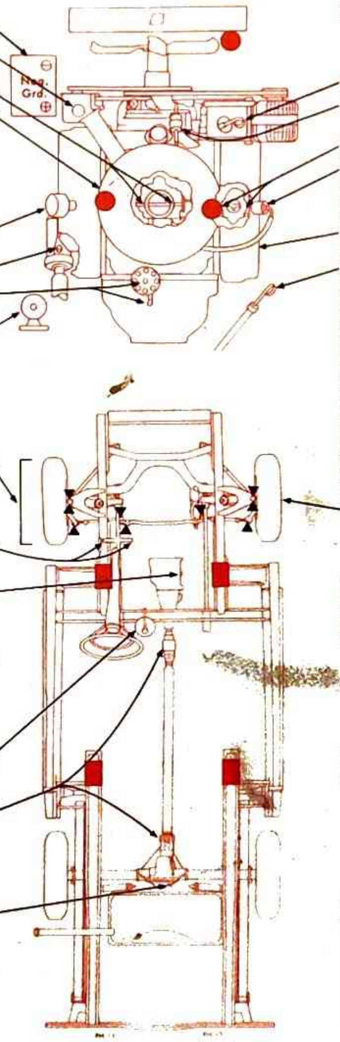
All models 18

TIRES

Pressure	Front	Rear
7.00-13	24	22*

* Suburban, 24; fully loaded, 28

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	30	20W-40,10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30,5W-20
Below −10°		5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level

Fuel Filter .... Replace
1964 16 1965 20

Manifold Heat Control Valve Shaft .... MH ★

PCV System Valve .... Check ★
Replace valve yearly or if clogged; also clean hose and carburetor, if passages are clogged
Service more frequently under severe service

Oil Filter (under car) .... Replace OC
Add extra quart oil

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
Severe service, check level every 2 months or 4,000 miles
To overcome difficult starting below −10°, replace 1½ pints fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	4	8

DRAIN and REFILL
Remove 1 converter plug, and parking sprag cavity plug; also remove oil pan
Regular drain not recommended
Severe service, drain every 32,000 miles; extremely severe service, initially 32,000 miles and every 10,000 miles thereafter
Replace transmission filter at time of drain

Front Wheel Bearings .... WB, LM
Inspect 20
Severe service, inspect every 10,000 miles
Repack C
Tighten front wheel adjusting nut to 70 in. lb., position lock nut over adjustment nut so that one set of slots on lock nut aligns with drilled hole in axle spindle. Back off adjusting and lock nuts one slot and install cotter key. Final adjustment should be 0 (no preload) to .003" end play

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- ★ Twice yearly
- 5 Every 5,000 miles
- 16 Every 16,000 miles or yearly
- 20 Every 20,000 miles or 2 years
- 32 Every 32,000 miles
- OC Every other crankcase oil change
- Y Yearly
- 2Y Every 2 years or 32,000 miles
- C Conditional service
  - Lubricate gearshift lever as required
  - Drain and refill differential for below −10° requirements
  - Repack front wheel bearings as required or at brake overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant MoPar Part No. 2525035
CC	Carburetor Cleaner
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease, EP No. 2
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
PS	Power Steering Fluid MoPar Part No. 2084329
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* For Sure-Grip differential, use MoPar Rear Axle Lubricant Part No. 2585318

PONTIAC V-8

1961-62 All Models Except Tempest

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1961 Std. with economy eng.	24	53, 61
Others	24	61
1962 Manual Trans.	24	53
Auto. Trans.	24	61
All (optional)	27	72

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
8.6:1CR	140-160*
10.25:1CR, 10.75:1CR	170-190*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC: 45S; high speed, 44
Gap: .033"-.038" (.035" preferred)
Torque: 25 ft. lb.

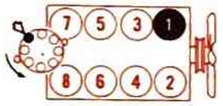
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

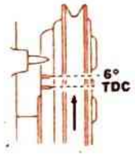


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect distributor vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP

AC model 4512
Pressure: 5¼-6¾ lb. at 500-1000 rpm (tested at carburetor height)
Volume: 1 pint in 45 seconds or less, at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1*	1 rich	1 rich
ROCHESTER			
2-bbl. 2GC	1½	index	index
(3) 2-bbl. 2GC	1½**	index**	index**

* Air bleed screw, initial adjustment, 1½ turns
** Idle and choke adjustments on center carburetor only

ENGINE IDLE SPEED

Manual Trans. 480-500 rpm
Auto. Trans. 480-500 rpm in DRIVE
Air Cond. 540-560 rpm in DRIVE with unit turned OFF and idle compensator valve held closed, if so equipped

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	19½	18½

Cooling system pressure, 15 pounds

★ **Battery** .... Test and fill

12 **Fuel Filter Element** .... Replace

★ **Power Steering Reservoir** .... PS, AF
Fill to level mark. Check for leaks

Air Cleaner Element .... Service
8 Wire gauze ...... Wash and oil 10W-30 **MO**
16 Dry type .... Clean or replace
16 Polyurethane .... Wash and oil 10W-30 **MO**

★ **Manual Steering Gear** (plug) .... **SG**
Check level, also for leaks

★ **Brake Master Cylinder** (plug or cap) .... **HB**
Check for leaks
Fill to ⅜ inch below top of fill hole

Front Suspension and Steering Linkage
★ 1961 .... (15 fittings) **CL**
35 1962 .... (15 fittings) **BJ**
1962 models lubricated at factory with special lubricant. Relubricate after 35,000 miles, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used, relubricate every 4,000 miles

★ **Clutch Lever Pivot** .... **CL**

★ **Clutch Lever Felts and Linkage** .... **MO**

C **Speedometer Cable** .... Coat **SP**

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, 1¾ pints
3-speed heavy-duty, 2¾ pints
4-speed, 2½ pints
DRAIN and REFILL Not recommended

C **Parking Brake Cables** .... Coat **WG**

DIFFERENTIAL .... 80 MP*

90 may be used
★ Check level, also for leaks
CAPACITY 5½ pints
DRAIN and REFILL Not recommended
SAFE-T-TRACK IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

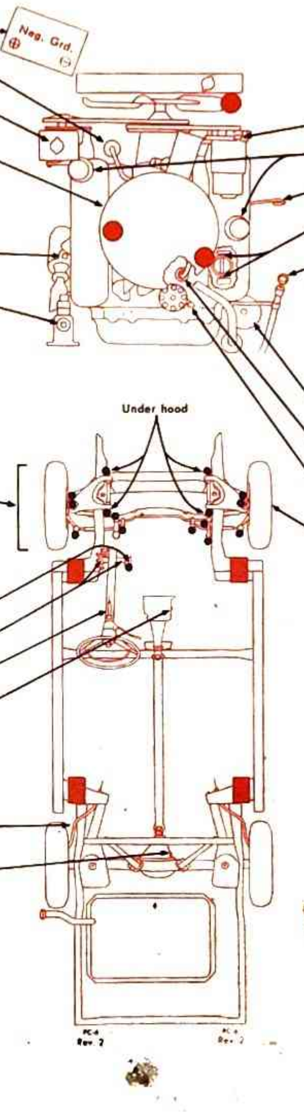
	Gallons
Safari	19
All other models	25

TIRES

Pressure	Front	Rear
8.00-14	22*	22
8.50-14	20*	20
8.50-14, Safari	22	24
8.00-14, 6 ply	28	28

* With air conditioning, add 2 pounds

★ Rotate tires, Method B, then balance wheels



CRANKCASE

	"MS" or "DG" MO	
Above +10°	20W*	10W-30
Above −10°	10W*	10W-30
Below −10°	5W*	5W-20

*For sustained high performance, high speed driving, use one grade heavier
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Generator (1 or 2 oil cups) 1961 .... **MO** 8

Oil Fill Caps .... Wash and oil **MO** 8

Crankcase Dipstick .... Check level

Manifold Heat Control Valve .... **MH** C
Lubricate if shaft is not free

TRANSMISSION, Automatic .. AF

Check level, engine idling, PARK position ★
Make certain dipstick is locked in place

CAPACITY, quarts	Initial Refill	Total Refill
Bonneville, Star Chief	6	9
Catalina, Grand Prix, Ventura	4	6

DRAIN and REFILL 25
Heavy-duty operating conditions or excessive stop-and-go driving, drain every 12,000 miles
Disconnect fill pipe. Bonneville and Star Chief, remove 1 coupling plug

Oil Filter (under car) .... Replace 4
Add extra quart oil

PCV System Valve .... Replace 12
Also remove and clean hose

Distributor Shaft (oil cup) 1961 .... **MO** ★

Front Wheel Bearings .... Repack **WB** C
1961, initial torque, 325 in. lb.; second torque, 25-35 in. lb. Tighten to insert cotter pin but do not exceed 110 in. lb.
1962, tighten to 10-12 ft. lb. while rotating wheel; back off ¼ turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

1. Make sure the parking brakes are completely released
2. Insert brake adjusting tool into adjustment slot in backing plate and expand shoes until wheel can just be turned by hand
3. Back off adjustment 12 notches
4. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ **Every 4,000 miles**
4 **Every 4,000 miles or 6 months**
8 **Every 8,000 miles**
12 **Every 12,000 miles or yearly**
16 **Every 16,000 miles or yearly**
25 **Every 25,000 miles**
35 **Every 35,000 miles**
C **Conditional service**
- Coat speedometer cable when noisy, or needle flickers
- Coat parking brake cables at time of brake repair
- Lubricate manifold heat control valve if shaft is not free
- Repack front wheel bearings when wheel is removed for other service

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Safe-T-Track differential, use only Pontiac special lubricant Part No. 531536

PONTIAC V-8

1963-65 All Models Except Tempest

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	53, 61
1963 optional	27	72
1964-65 optional	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
8.6:1CR	140-150*
10.25:1CR, 10.50:1CR, 10.75:1CR	155-165*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC 45S
Gap: .033"-.038" (.035" preferred)
Torque: 15-25 ft. lb.

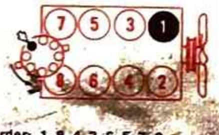
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

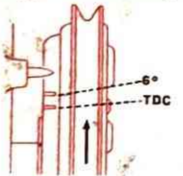


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect distributor vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP

AC model 4512; with Air Cond., 6550
Pressure: 5¼-6½ lb. at 500-1000 rpm *
Volume: 1 pint in 45 seconds or less at idle rpm
* Air Cond. at 1800 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1*	index**	index**
ROCHESTER			
2-bbl. 2GC	1½	index	index
(3) 2-bbl. 2GC	1½†	index	index

* Air bleed screw, initial adjustment, 1½ turns
** 1964-65 1 rich
† Idle adjustment on center carburetor only

ENGINE IDLE SPEED

Manual Trans.: 1963-64, 480-500 rpm*
1965, 580-600 rpm
Auto. Trans.: 1963-65, 480-500 rpm*● in DRIVE
Air Cond.: 1963-65, 540-560 rpm†‡ in DRIVE, unit turned OFF
* 1964 421 H.O. 640-660 rpm
● 1965 421 H.O. 580-600 rpm
† 1964 421 H.O. 690-710 rpm
‡ 1965 421 H.O.; 389, 421 with Man. Trans.; 640-660 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek Chart

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	19½	18½

Cooling system pressure, 15 pounds

Battery .... Check and fill
Check at least every 30 days

12 **Fuel Filter Element** .... Service
In carburetor .... Clean
In fuel line .... Replace
Tri-Power .... Replace

★ **Power Steering Reservoir** .... PS, AF
Fill to level mark or FULL mark on dipstick. Check for leaks

Air Cleaner Element .... Service
12 Dry type .... Clean or replace
12 Polyurethane .... Wash and oil 10W-30 MO
★ Wire gauze ...... Wash and oil 10W-30 MO
With closed PCV system, wash and oil wire gauze filter inside air cleaner housing every 12,000 miles or 12 months. Not on Tri-Power 421 H.O. engine

★ **Manual Steering Gear** (plug on 1963) .... SG
Check level, also for leaks
1964-65, fill thru top cover cap screw marked "Check Lube"

★ **Brake Master Cylinder** (plug or cap) .... HB
Check for leaks
Fill to ½ inch below top of fill hole

30 **Front Suspension and Steering Linkage** ...... (9 or 10 fittings) BJ
Lubricated at factory with special lubricant. Relubricate every 12 months or 30,000 miles whichever occurs first, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used, relubricate every 6 months or 6,000 miles whichever occurs first

★ **Clutch Lever Pivot** .... BJ

★ **Clutch Lever Felts and Linkage** .... MO

C **Speedometer Cable** .... Coat SP

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, 1963-64 1¾ pints; 1965 3½ pints. 3-speed heavy-duty, Type 1, 2¾ pints; Type 2, 3½ pints (Type 1 equipped with side cover, Type 2, no side cover). 4-speed, 2½ pints
DRAIN and REFILL Not recommended

C **Parking Brake Cables** .... Coat WG

DIFFERENTIAL .... 80 MP*

90 may be used
★ Check level, also for leaks
CAPACITY 5¾ pints
DRAIN and REFILL Not recommended
SAFE-T-TRACK IDENTIFICATION:
Metal tag attached to housing near fill plug

GAS TANK .... Gallons

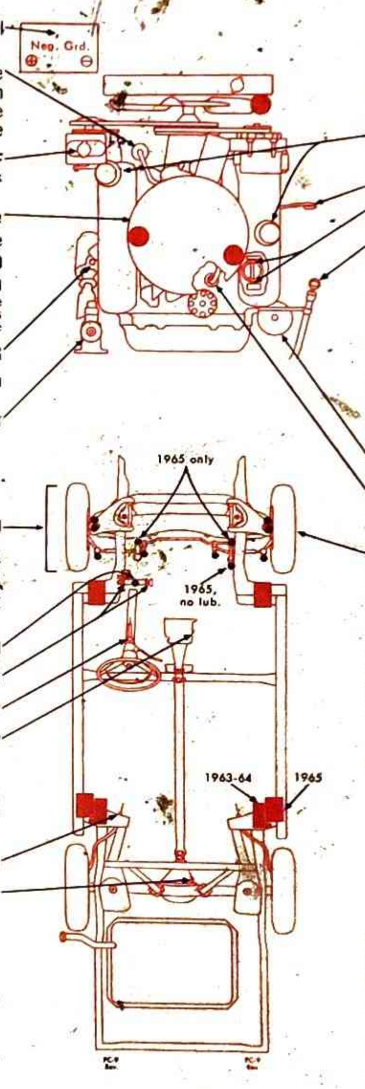
	1963-64	1965
Safari	19	25
All other models	25	26½

TIRES .... Pressure

	Front	Rear
8.00-14	24	22
8.50-14	24	22
8.50-14 Safari	22*	26**
8.25-14, 8.55-14	24†	22†
8.55-14 Safari	22‡	26‡

* With air conditioning, increase pressure 2 lbs.
** With heavy load, 30
† Over 5-passenger load, front 26, rear 30
‡ Over 5-passenger load, front 24, rear 30
Caution: 1964-65 wheel nuts, right-hand thread

★ Rotate tires, Method B, then balance wheels



🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 1963-64, 4 quarts except 421-cu. in. engine, 5 quarts; 1965, 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Caps .... Wash and oil MO 12
1964-65, one fill cap, on right valve cover
Models with closed PCV system, no service

Crankcase Dipstick .... Check level

Manifold Heat Control Valve .... MH ★
Reach from under car. Lubricate if shaft is not free

TRANSMISSION, Automatic .. AF

Check level, engine idling, PARK position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
1963-64 Bonneville, Star Chief	6	9
1963-64 Catalina, Grand Prix	4	6
1965, all models	2¾	3¾

DRAIN and REFILL 24
1963-64, disconnect fill pipe; Bonneville and Star Chief, also remove 1 coupling plug. All 1965, remove oil pan
1963, make certain dipstick is locked in place
Under heavy-duty operating conditions or excessive stop-and-go driving, replace fluid every 12,000 miles

Oil Filter (under car) .... Replace ★
Add extra quart oil

PCV System Valve .... Replace 12
Also remove and clean hose. 1965 Tri-Power 421 H.O. engine, also clean flame arrester in hose
Check operation at each oil change

Front Wheel Bearings .... Repack WB C
Tighten adjusting nut 10-16 ft. lb. while rotating wheel, back off and retorque to 20-25 inch lb. Back off adjusting nut to nearest slot in nut and install new cotter pin. Desired end play, .001"-.005"

BRAKE ADJUSTMENT

Brakes are self-adjusting. If brakes have been relined or the adjustment disturbed, make initial adjustment as follows:
1963-64:

1. Remove wheel, insert .015" feeler through slot in drum to check clearance at both ends of secondary shoe with primary shoe seated against drum
2. Adjust brake with adjusting screw and anchor pin to secure initial feeler drag of 5-10 lb. at both ends of secondary shoe. Tighten anchor pin lock nut to 60-90 ft. lb. To loosen adjusting screw, hold adjuster lever away from adjusting screw with awl or screwdriver and back off adjustment
   Note: Rear brakes have fixed anchors. If drum does not have feeler slot, tighten brake until heavy drag of 14-20 ft. lb. is felt at outer surface of drum. Hold adjuster lever away from adjusting screw with awl or screwdriver and back off adjustment 30 notches (1963); 24 notches (1964)
3. Repeat procedure at each wheel

1965: Front and rear brakes have fixed anchors. Adjust as shown above for 1964 rear brakes, without feeler slot

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 24 months
30 Every 30,000 miles or 12 months
C Conditional service
Coat speedometer cable when noisy, or needle flickers
Coat parking brake cables at time of brake repair
Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Safe-T-Track differential, use only Pontiac special lubricant Part No. 531536

PONTIAC TEMPEST 4

1961-62 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	42
	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
8.6:1CR	140-160*
10.25:1CR	170-190*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC 45S; trailer towing, 44S
Gap: .033"-.038" (.035" preferred)
Torque: 25 ft. lb.

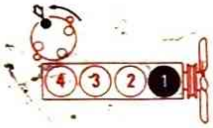
IGNITION POINTS

Delco
Gap: .019"
Dwell angle: 74°-76° (75° preferred); late 1962 without adjusting window, 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

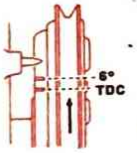


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP

AC model 4843
Pressure: 4-5¼ lb. at 1800 rpm (tested at carburetor height)
Volume: 1 pint in 45 seconds or less, at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. B	1½	manual	—
1-bbl. BC	1½	index	index
4-bbl. 4GC	1½*	1 rich	1 rich

* Air bleed screw, initial adjustment, 1 turn

ENGINE IDLE SPEED

Manual Trans. 680-700 rpm
Auto. Trans. 580-600 rpm in DRIVE
Air Cond. Manual Trans. 680-700 rpm; Auto. Trans. 630-650 rpm in DRIVE; with unit turned OFF

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	12½	11½
With air conditioning	13	12

Cooling system pressure, 15 pounds

★ **Battery** .... Test and fill

★ **Power Steering Reservoir** .... PS, AF
Maintain level between FULL and ADD marks on dipstick. Check for leaks

★ **Manual Steering Gear** (plug) .... SG
Check level, also for leaks

[8] **Generator** (1 or 2 oil cups) .... MO

Fuel Filter Element .... Service
[12] In fuel line .... Replace
[TY] In carburetor .... Clean
[12] In carburetor .... Replace

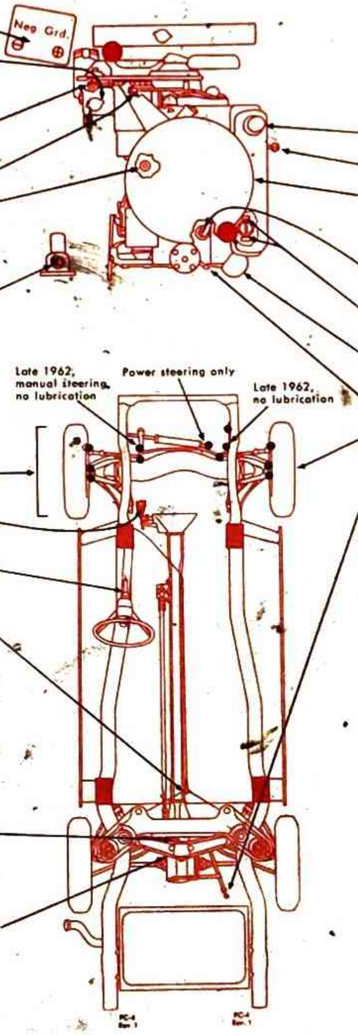
★ **Brake Master Cylinder** (plug or cap) .... HB
Check for leaks
Fill to ⅞ inch below top of fill hole

★ **Front Suspension and Steering Linkage** .... (9 to 12 fittings) CL

★ **Clutch Shaft Felt** .... MO

[C] **Speedometer Cable** .... Coat SP

Parking Brake Cables
[C] Coat .... WG
1961, also coat cable where it passes over torque tube CL


Chek-Chart
Neg Grd.
Late 1962, manual steering, no lubrication
Power steering only
Late 1962, no lubrication

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, 3 pints; 4-speed, 4 pints
DRAIN and REFILL Not recommended

DIFFERENTIAL .... 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3 pints
DRAIN and REFILL Not recommended

GAS TANK .... Gallons

All models 16

TIRES

Pressure	Front	Rear
6.00-15, Sedan	22	22
6.50-15, Sedan	22	22
6.50-15, station wagon	22	26

★ Rotate tires, Method B, then balance wheels

LIFTING CAUTION
Never lift car by front or rear bumpers

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

	"MS" or "DG" MO	
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil MO [8]

Crankcase Dipstick .... Check level

Air Cleaner Element .... Service
Wire gauze ...... Wash and oil 10W-30 MO [8]
Polyurethane .... Wash and oil 10W-30 MO [16]

PCV System Valve .... Replace [12]
Also remove and clean hose

Manifold Heat Control Valve .... MH [C]
Lubricate if shaft is not free

Oil Filter (under car) .... Replace [4]
Add extra quart oil

Distributor Shaft (oil cup) 1961 .... MO ★

Front Wheel Bearings .... Repack WB [C]
Tighten to 10-12 ft. lb. while rotating wheel; back off ¼ turn

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position .... ★
Remove cover plate in luggage compartment floor pan to reach dipstick
1961, make sure dipstick is locked in place
CAPACITY 3 quarts
DRAIN and REFILL Not recommended
Remove the oil fill tube

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Adjust the brakes as follows:

1. Make sure parking brake is completely released
2. Use a suitable tool inserted into adjustment slot in backing plate to expand shoes to produce 5-8 lb. drag at outside of tire when wheel is turned
3. Back off adjustment 10 notches on front brakes, 12* notches on rear brakes. Drum should turn freely without drag
4. Repeat procedure at each wheel

* Back off 14 notches if hoist supports rear suspension near ends of control arms and prevents rear wheels from hanging down

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 4,000 miles
[4] Every 4,000 miles or 6 months
[8] Every 8,000 miles
[12] Every 12,000 miles or yearly
[16] Every 16,000 miles or yearly
[TY] Twice yearly
[C] Conditional service
- Coat speedometer cable when noisy, or needle flickers
- Coat parking brake cables at time of brake repair
- Lubricate manifold heat control valve if shaft is not free
- Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

PONTIAC TEMPEST 4

1963 All Models

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F 24	44 61

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
7.6:1CR, 8.6:1CR	140-160*
10.25:1CR	170-190*

* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS

AC 45S; heavy-duty, 44S
Gap: .035"
Torque: 25 ft. lb.

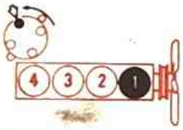
IGNITION POINTS

Delco
Gap: .019"
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

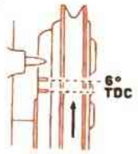


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP

AC model 4843

Pressure: 4-5⅜ lb. at 1000 rpm (tested at carburetor height)

Volume: 1 pint in 45 seconds or less at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. B	1½	manual	—
1-bbl. BC	1½	index	index
4-bbl. 4GC	1½*	1 rich	1 rich

* Air bleed screw, initial adjustment, 1 turn

ENGINE IDLE SPEED

Manual Trans. 680-700 rpm*

Auto. Trans. 580-600 rpm in DRIVE*

Air Cond. Manual Trans. 680-700 rpm; Auto. Trans. 580-600 rpm in DRIVE; with unit turned OFF*

* If so equipped, make certain hot idle compensator valve is closed

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	12½	11½
With air conditioning	13	12

Cooling system pressure, 15 pounds

★ **Battery** .... Test and fill

★ **Manual Steering Gear** (plug) .... **SG**
Check level, also for leaks

★ **Power Steering Reservoir** .... **PS, AF**
Maintain level between FULL and ADD marks on dipstick. Check for leaks

Fuel Filter Element .... Service
TY In carburetor .... Clean
12 In carburetor .... Replace
12 In fuel line .... Replace

★ **Brake Master Cylinder** (plug or cap) .... **HB**
Check for leaks
Fill to ½ inch below top of fill hole

12 **Front Suspension and Steering Linkage** ...... (9 or 11 fittings) **BJ**
Lubricated at factory with special lubricant. Relubricate every 12 months or 12,000 miles whichever occurs first, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used, relubricate every 6 months or 6,000 miles whichever occurs first

★ **Clutch Shaft Felt** .... **MO**

C **Speedometer Cable** .... Coat **SP**

C **Parking Brake Cables** .... Coat **WG**

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, **3 pints**; 4-speed, **3⅞ pints**
DRAIN and REFILL Not recommended

DIFFERENTIAL .... 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3¼ pints
DRAIN and REFILL Not recommended

GAS TANK .... Gallons

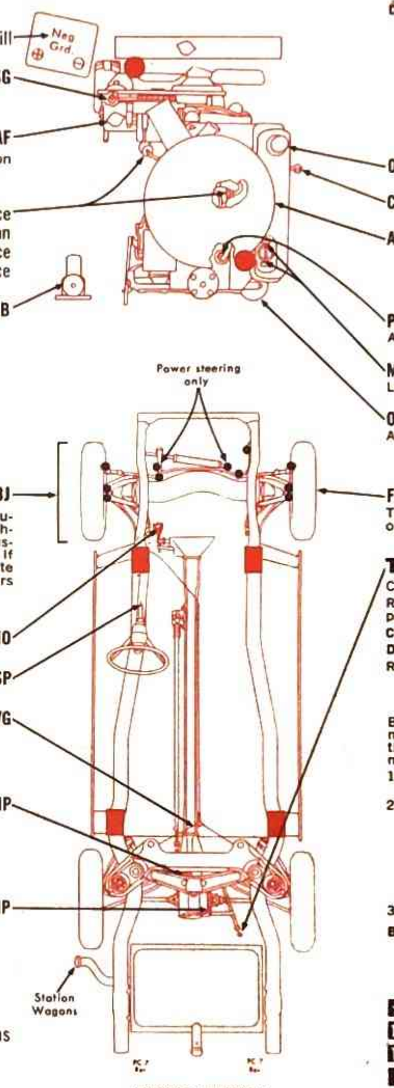
All models 20

TIRES

Pressure	Front	Rear
6.00-15	22	22
6.50-15	20*	20
6.50-15, Safari	22*	26

*With air conditioning, increase pressure 2 pounds

★ Rotate tires, Method B, then balance wheels



LIFTING CAUTION
Never lift car by front or rear bumpers

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil **MO** 12

Crankcase Dipstick .... Check level

Air Cleaner Element .... Service
Polyurethane .... Wash and oil 10W-30 **MO** 12
Wire gauze ...... Wash and oil 10W-30 **MO** ★

PCV System Valve .... Replace 12
Also remove and clean hose

Manifold Heat Control Valve .... **MH** C
Lubricate if shaft is not free

Oil Filter (under car) .... Replace ★
Add extra quart oil

Front Wheel Bearings .... Repack **WB** C
Tighten to 10-12 ft. lb. while rotating wheel; back off ¼ turn

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position ★
Remove cover plate in luggage compartment floor pan to reach dipstick
CAPACITY 2 quarts
DRAIN and REFILL Not recommended
Remove the oil fill tube

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Turn adjusting screw to produce a 5-8 lb. drag on outside of tire
2. With small screw driver hold adjuster lever away from adjusting screw and back off adjustment 22 notches on front brakes and 26 notches on rear brakes. (Back off 30 notches on rear brakes if lift supports rear suspension near ends of control arms and prevents rear wheels from hanging down) Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or yearly**
TY **Twice yearly**
C **Conditional service**
Coat speedometer cable when noisy, or needle flickers
Coat parking brake cables at time of brake repair
Lubricate manifold heat control valve if shaft is not free
Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

PONTIAC TEMPEST 6

1964-65 All Models

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22F	44
Air conditioning	24	61

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

1964 .... 140*

* Lowest cylinder pressure should be within 80% of highest cylinder

1965: No cylinder should be less than 80% of the highest cylinder

SPARK PLUGS

AC 46N
Gap: .033"-.038" (.035" preferred)
Torque: 15-25 ft. lb.

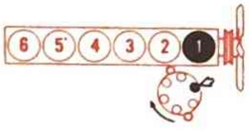
IGNITION POINTS

Delco
Gap: .019" new; .016" used
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

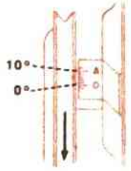


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4° (Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 3½-4½ lb. at 500-1000 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. BV	1½	*	*

* Bend choke for adjustment

ENGINE IDLE SPEED

Manual Trans. 580-600 rpm
Auto. Trans. 480-500 rpm in DRIVE
Air Cond. Manual Trans. 580-600 rpm; Auto. Trans. 480-500 rpm in DRIVE; with unit turned OFF and hot idle compensator held shut, if so equipped

VALVE CLEARANCES

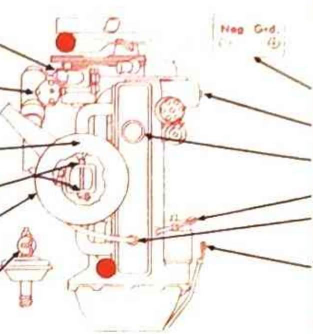
Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater
All models	11¼

Cooling system pressure, 15 pounds



★ **Power Steering Reservoir** .... PS, AF
Maintain level between FULL and ADD marks on dipstick. Check for leaks

★ **Manual Steering Gear** .... SG
Check level, also for leaks
Fill thru top cover cap screw marked "Check Lube"

12 **Fuel Filter Element** .... Clean
Located in carburetor

★ **Manifold Heat Control Valve** .... MH
Lubricate if shaft is not free

Air Cleaner Element .... Service
12 Polyurethane....Wash and oil 10W-30 **MO**
1965 with closed PCV system, clean flame arrester inside air cleaner housing

★ **Brake Master Cylinder** (cap) .... HB
Check for leaks
Fill to ½ inch below top of fill hole

CRANKCASE

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Battery .... Check and fill
Check at least every 30 days

Oil Filter (under car) .... Replace ★
Add extra quart oil

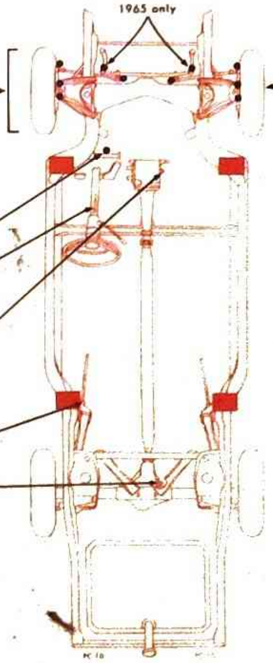
Oil Fill Cap .... Wash and oil **MO** 12
Models with closed PCV system, no service

Crankcase Dipstick .... Check level

PCV System Valve .... Replace 12
Also remove and clean hose
Check operation at each oil change

TRANSMISSION, Automatic AF

Check level, engine idling, PARK position .... ★
CAPACITY Refill 3 quarts
DRAIN and REFILL 24
Remove oil pan
Under heavy-duty operating conditions or excessive stop-and-go driving, replace fluid every 12,000 miles



12 **Front Suspension and Steering Linkage** ...... (8 or 10 fittings) BJ
Lubricated at factory with special lubricant. Relubricate every 12 months or 12,000 miles whichever occurs first, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used relubricate every 6 months or 6,000 miles whichever occurs first

★ **Clutch Lever Pivot** .... BJ

C **Speedometer Cable** .... Coat SP

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, **2 pints**; 4-speed, **2½ pints**
DRAIN and REFILL Not recommended

C **Parking Brake Cables** .... Coat WG

DIFFERENTIAL .... 80 MP*

90 may be used
★ Check level, also for leaks
CAPACITY 3 pints
DRAIN and REFILL Not recommended
SAFE-T-TRACK IDENTIFICATION:
Metal tag attached to housing cover

GAS TANK .... Gallons

1964	21½
1965	24

TIRES

Pressure	Front	Rear
6.50-14, 7.00-14, 7.50-14	24	22
7.00-14, 7.50-14 Safari	24	26
6.95-14, 7.85-14	24*	22*
7.45-14, 7.85-14 Safari	24*	26*

* Over 5-passenger load, front **26**, rear **30**
Caution: Wheel nuts, right-hand thread

★ Rotate tires, Method B, then balance wheels

🟥 Position for lift adapter
• Lubrication fitting
🔴 Cooling system drain

Front Wheel Bearings .... Repack WB C
Tighten adjusting nut 10-16 ft. lb. while rotating wheel, back off and retorque to 20-25 inch lb. Back off adjusting nut to nearest slot in nut and install new cotter pin. Desired end play, .001"-.005"

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Turn adjusting screw to produce a 14-20 lb. drag on outside of tire
2. With small screw driver hold adjuster lever away from adjusting screw and back off adjustment 30 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 24 months
C Conditional service

Coat speedometer cable when noisy, or needle flickers

Coat parking brake cables at time of brake repair

Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Safe-T-Track differential, use only Pontiac special lubricant Part No. 531536

PONTIAC TEMPEST V-8
1963 All Models

HOOD RELEASE: Front

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	53
	24	61

COMPRESSION PRESSURE
(at cranking speed with throttle open) psi

8.6:1CR 140-160*
10.25:1CR 170-190*

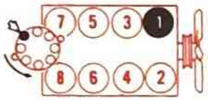
* Lowest cylinder pressure should be within 80% of highest cylinder

SPARK PLUGS
AC 45S; heavy-duty, 44S
Gap: .035"
Torque: 25 ft. lb.

IGNITION POINTS
Delco
Gap: .016"
Dwell angle: 28°-32° (30° preferred)

CONDENSER
Delco
Capacity: .18-.23 mfd

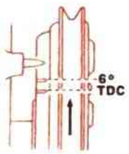
Cylinder Numbering Sequence



Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP
AC model 6542
Pressure: 5¼-6¾ lb. at 1000 rpm (tested at carburetor height)
Volume: 1 pint in 45 seconds or less at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1*	1 rich	1 rich
ROCHESTER			
2-bbl. 2GC	1½	index	index

* Air bleed screw, initial adjustment, 1½ turns

ENGINE IDLE SPEED
Manual Trans. 580-600 rpm

Auto. Trans. 480-500 rpm in DRIVE*

Air Cond. Manual Trans. 640-660 rpm; Auto. Trans. 540-560 rpm in DRIVE, with unit turned OFF*

*If so equipped, make certain hot idle compensator valve is closed

VALVE CLEARANCES
Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . . Quarts

	With Heater	Without Heater
All models	21	20
With air conditioning	22½	21½

Cooling system pressure, 15 pounds

Chek-Chart

★ **Battery** . . . . . Test and fill

★ **Manual Steering Gear** (plug) . . . . . SG
Check level, also for leaks

★ **Power Steering Reservoir** . . . . . PS, AF
Maintain level between FULL and ADD marks on dipstick. Check for leaks

12 **Oil Fill Caps** . . . . . Wash and oil MO

★ **Brake Master Cylinder** (plug or cap) . . . . . HB
Check for leaks
Fill to ½ inch below top of fill hole

12 **Front Suspension and Steering Linkage** . . . . . (9 or 11 fittings) BJ
Lubricated at factory with special lubricant. Relubricate every 12 months or 12,000 miles whichever occurs first, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used, relubricate every 6 months or 6,000 miles whichever occurs first

★ **Clutch Shaft Felt** . . . . . MO

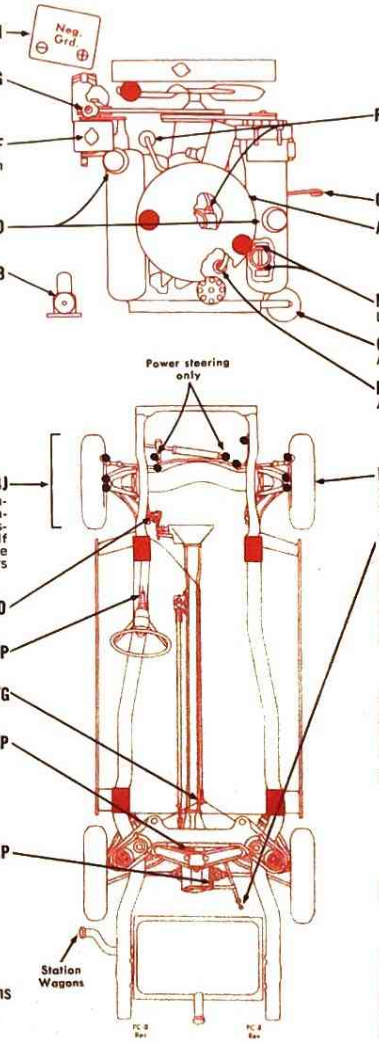
C **Speedometer Cable** . . . . . Coat SP

C **Parking Brake Cables** . . . . . Coat WG

TRANSMISSION, Manual . . 80 MP
90 may be used
★ Check level, also for leaks
CAPACITY 3-speed, 3 pints; 4-speed, 3⅞ pints
DRAIN and REFILL Not recommended

DIFFERENTIAL . . . . . 80 MP
90 may be used
★ Check level, also for leaks
CAPACITY 3¼ pints
DRAIN and REFILL Not recommended

GAS TANK . . . . . Gallons
All models 20



LIFTING CAUTION
Never lift car by front or rear bumpers

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

TIRES

	Pressure Front	Rear
6.50-15	22*	20
6.50-15, Safari	22*	26

*With air conditioning, increase pressure 2 pounds

★ Rotate tires, Method B, then balance wheels

CRANKCASE . . . . . "MS" MO

Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element . . . . . Service
In carburetor . . . . . Clean TY
In carburetor . . . . . Replace 12
In fuel line . . . . . Replace 12

Crankcase Dipstick . . . . . Check level

Air Cleaner Element . . . . . Service
Polyurethane . . . . . Wash and oil 10W-30 MO 12
Wire gauze . . . . . Wash and oil 10W-30 MO ★

Manifold Heat Control Valve . . . . . MH C
Lubricate if shaft is not free

Oil Filter (under car) . . . . . Replace ★
Add extra quart oil

PCV System Valve . . . . . Replace 12
Also remove and clean hose

Front Wheel Bearings . . . . . Repack WB C
Tighten to 10-12 ft. lb. while rotating wheel; back off ⅙ turn

TRANSMISSION, Automatic . . AF
Check level, engine idling, NEUTRAL position . . . ★
Remove cover plate in luggage compartment floor pan to reach dipstick
CAPACITY 2 quarts
DRAIN and REFILL Not recommended
Remove the oil fill tube

BRAKE ADJUSTMENT
Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Turn adjusting screw to produce a 5-8 lb. drag on outside of tire
2. With small screw driver hold adjuster lever away from adjusting screw and back off adjustment 22 notches on front brakes and 26 notches on rear brakes. (Back off 30 notches on rear brakes if lift supports rear suspension near ends of control arms and prevents rear wheels from hanging down) Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS
★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or yearly**
TY **Twice yearly**
C **Conditional service**
Coat speedometer cable when noisy, or needle flickers
Coat parking brake cables at time of brake repair
Lubricate manifold heat control valve if shaft is not free
Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

PONTIAC TEMPEST V-8

1964-65 All Models

1964

1965

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
8.6:1, 9.2:1 CR engines	24	53
Air conditioning	24	61
Others	24	61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
1964: 8.6:1 CR engine	140-160*
10.5:1, 10.75:1 CR engines	170-190*

* Lowest cylinder pressure should be within 80% of highest cylinder

1965: No cylinder should be less than 80% of the highest cylinder

SPARK PLUGS

AC 45S
Gap: .033"-.038" (.035" preferred)
Torque: 15-25 ft. lb.

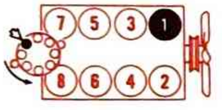
IGNITION POINTS

Delco
Gap: .019" new; .016" used
Dwell angle: 28°-32° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

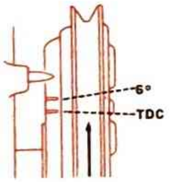


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape line opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at harmonic balancer and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6°

FUEL PUMP

AC model 6542
Pressure: 5¼-6¾ lb. at 1000 rpm (tested at carburetor height)
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER 4-bbl. AFB	1	1 rich	1 rich
ROCHESTER 2-bbl. 2GC	1½	index	index

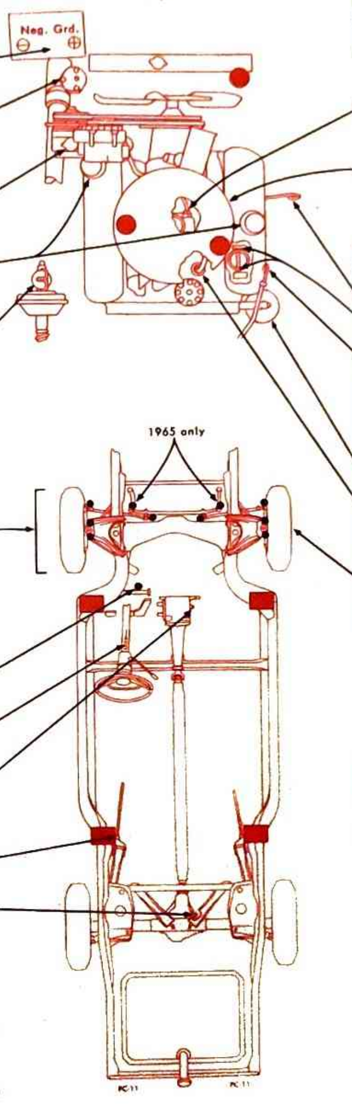
ENGINE IDLE SPEED

Manual Trans. 580-600 rpm
Auto. Trans. 480-500* rpm in DRIVE
Air Cond.: Manual Trans. 640-660 rpm; Auto. Trans. 540-560** rpm in DRIVE, with unit turned OFF and hot idle compensator held shut, if so equipped
* Tri-Carb eng. 580-600 rpm
** Tri-Carb eng. 640-660 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS



COOLING SYSTEM .... Quarts

	With Heater
All models	20½

Cooling system pressure, 15 pounds

Battery .... Check and fill
Check at least every 30 days

★ **Manual Steering Gear** .... SG
Check level, also for leaks
Fill thru top cover cap screw marked "Check Lube"

★ **Power Steering Reservoir** .... PS, AF
Maintain level between FULL and ADD marks on dipstick. Check for leaks

12 **Oil Fill Caps** .... Wash and oil MO
1965, some 1964, one fill cap, on right valve cover
Models with closed PCV system, no service

★ **Brake Master Cylinder** (cap) .... HB
Check for leaks
Fill to ½ inch below top of fill hole

12 **Front Suspension and Steering Linkage** ......(8 or 10 fittings) BJ
Lubricated at factory with special lubricant. Relubricate every 12 months or 12,000 miles whichever occurs first, or if noise develops, with Suspension Lubricant, Pontiac Part No. 1474829. If conventional chassis lubricant is used, relubricate every 6 months or 6,000 miles whichever occurs first

★ **Clutch Lever Pivot** .... BJ

C **Speedometer Cable** .... Coat SP

TRANSMISSION, Manual .. 80 MP

90 may be used
★ Check level, also for leaks
CAPACITY 3-speed **2 pints; 4-speed, 2½ pints**
DRAIN and REFILL Not recommended

C **Parking Brake Cables** .... Coat WG

DIFFERENTIAL .... 80 MP*

90 may be used
★ Check level, also for leaks
CAPACITY 3 pints
DRAIN and REFILL Not recommended
SAFE-T-TRACK IDENTIFICATION:
Metal tag attached to housing cover

GAS TANK .... Gallons

1964	21½
1965	24

TIRES

Pressure	Front	Rear
6.50-14, 7.00-14, 7.50-14	24	22
7.00-14, 7.50-14 Safari	24	26
7.50-14 GTO-22 series	22	20
7.45-14, 7.85-14	24*	22*
7.45-14, 7.85-14 Safari	24*	26*

* Over 5-passenger load, front 26, rear 30
Caution: Wheel nuts, right-hand thread

★ Rotate tires, Method B, then balance wheels

■ Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

CAPACITY 1964, **4 quarts** except GTO, **5 quarts;** 1965, **5 quarts**
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Element .... Service 12
In carburetor .... Clean
Tri-Power .... Replace

Air Cleaner Element .... Service
Dry type .... Clean or replace 12
Polyurethane ..... Wash and oil 10W-30 MO 12
Wire gauze ...... Wash and oil 10W-30 MO ★
With closed PCV system, wash and oil wire gauze filter inside air cleaner housing every 12,000 miles or 12 months. Not on GTO Tri-Power models

Crankcase Dipstick .... Check level

Manifold Heat Control Valve .... MH ★
Lubricate if shaft is not free

TRANSMISSION, Automatic .. AF

Check level, engine idling, PARK position .... ★
CAPACITY Refill 3 quarts
DRAIN and REFILL 24
Remove oil pan
Under heavy-duty operating conditions or excessive stop-and-go driving, replace fluid every 12,000 miles

Oil Filter (under car) .... Replace ★
Add extra quart oil

PCV System Valve .... Replace 12
Also remove and clean hose. 1965 GTO Tri-Power engine with closed PCV system, also clean flame arrester in hose
Check operation at each oil change

Front Wheel Bearings .... Repack WB C
Tighten adjusting nut 10-16 ft. lb. while rotating wheel, back off and retorque to 20-25 inch lb. Back off adjusting nut to nearest slot in nut and install new cotter pin. Desired end play, .001"-.005"

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, make initial adjustment as follows:

1. Turn adjusting screw to produce a 14-20 lb. drag on outside of tire
2. With small screw driver hold adjuster lever away from adjusting screw and back off adjustment 30 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: LF, RF, LR, RR

KEY TO INTERVALS

★ **Every 6,000 miles or 6 months**
12 **Every 12,000 miles or 12 months**
24 **Every 24,000 miles or 24 months**
C **Conditional service**
Coat speedometer cable when noisy, or needle flickers
Coat parking brake cables at time of brake repair
Repack front wheel bearings when wheel is removed for other service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
BJ	Suspension Lubricant Pontiac Part No. 1474829
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Specification MIL-L-2105B
PS	Power Steering Fluid Pontiac Part No. 9771864
SG	Steering Gear Lubricant
SP	Speedometer Cable Grease
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Safe-T-Track differential, use only Pontiac special lubricant Part No. 531536

RAMBLER 6

1961-63 American

1961

1962

1963

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24	50
Air conditioning	24H	60
1963 Optional H.D.	24H	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
L-head engine	minimum 130
OHV engine	minimum 145

SPARK PLUGS

Champion: L-head, H-10; OHV, H-18Y
Gap: .033"-.037"
Torque: 25-30 ft. lb.

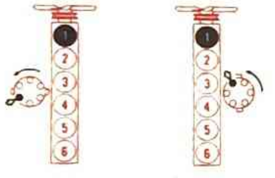
IGNITION POINTS

Autolite, Delco
Gap: Autolite, .018"-.022"; Delco, .016"
Dwell angle: Autolite, 36°-42°; Delco 1961-62, 28°-35°, 1963, 31°-34°

CONDENSER

Autolite, Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



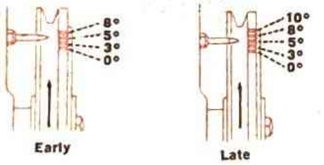
L-head OHV

Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
6. Reset to proper idle speed

Timing Mark and Setting



Early Late

Timing Setting (Before Top Dead Center):
Regular fuel: L-head, 3°; OHV, Manual Trans., 8°; Auto. Trans. 10°
Premium fuel: L-head, 6°; OHV, Manual Trans., 12°; Auto. Trans., 14°

FUEL PUMP

Carter mechanical
Pressure: 4-5½ lb.; 1961-62 at 1800 rpm, 1963 at 500 rpm
Volume: 1 quart in 1 minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. YF	½-1½	1 lean	1 lean
1-bbl. RBS	¼-1¼	index	index
2-bbl. WCD	½-1½	index	index
HOLLEY			
1-bbl. 1908	1¼	3 lean	3 lean
1-bbl. 1909	0-2¾	index	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 500 rpm in NEUTRAL
Air Cond. 500 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

(engine hot and running)
OHV engine: Intake .012"; exhaust .016"
V, (engine cold, not running)
Hyd-head engine: Intake .016"; exhaust .018"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
OHV engine	11	10
L-head engine	12	11

Cooling system pressure, 13 pounds

[5] **Generator** (2 oil cups) 1961 .... MO

★ **Battery** .... Test and fill

★ **Distributor Shaft** (oil cup) 1961 ...... 10W MO
[10] OHV engine (plug) 1961 .... 10W MO
[5] Wick under rotor 1961 ...... Sparingly MO
Wick on L-head engine only

[4] **Oil Fill Cap** .... Wash and oil MO

Crankcase Dipstick .... Check level
Attached to oil fill cap

★ **Brake Master Cylinder** (1 or 2 caps) .... HB
1961-62, fill to ½ inch below top of fill hole
1963, fill to ¼ inch below top of reservoir

[10] **Power Brake Air Cleaner Element** 1961 ... Wash

[32] **Gearshift Control Shaft** CL

★ **Throttle Linkage** (OHV engine only) .... MO
Wick and all linkage points

★ **Front Suspension and Steering Linkage** .. (10, 11 or 12 fittings) CL

[32] **Pitman Arm Stud** .... (plug) LM
1962-63 models with power steering
Lubricate using special adapter. Reinstall plug

★ **Steering Gear** (plug) .... 90 EP

Clutch Operating Lever
★ 1961 CL
[32] 1962-63 (2 plugs) .... LM
Lubricate using special adapter. Reinstall plugs

★ **Transmission Shift Levers** .... MO

TRANSMISSION, Manual .. 80 GL

20,20W, 10W-30 MO or AF may be used
★ Maintain level to fill plug hole
CAPACITY 1½ pints; with overdrive, 2¾ pints
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole
CAPACITY 3 pints
DRAIN and REFILL Not recommended
TWIN-GRIP IDENTIFICATION:
Metal tag under fill-plug

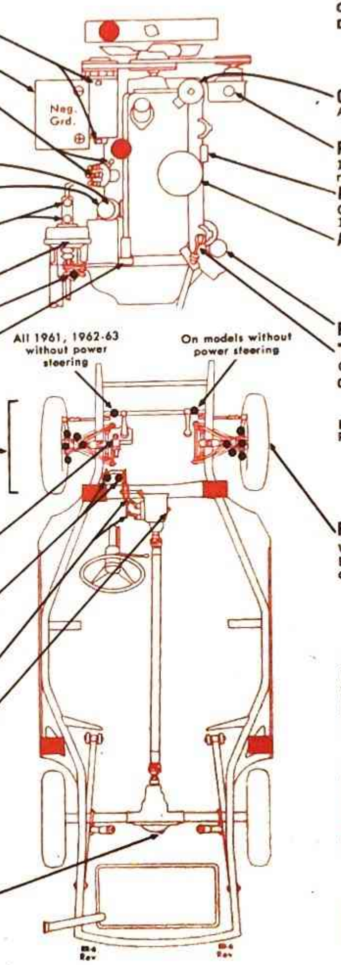
GAS TANK .... Gallons

All models 20

TIRES .... Pressure	Front	Rear
6.00-15, 6.50-15	24	24

Fully loaded car or extensive highway operation, 30

[4] **Rotate tires, Method A, then balance wheels**
Every 4,000 to 8,000 miles


Neg. Grd.
All 1961, 1962-63 without power steering
On models without power steering

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

CRANKCASE	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W*	5W-20

* For lengthy highway operation, 10W

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Filter .... Replace [4]
Add extra quart oil. Left side on OHV engine

Power Steering Reservoir .... AF ★
1961, fill to bottom of filler neck; 1962-63, fill reservoir until oil is halfway up filler neck

PCV System Valve .... Wash CC [8]
On left side of OHV engine. 1963 OHV engine with 1-bbl. carb., no valve, clean tube only

Air Cleaner Element .... Service
Dry type .... Clean [4]
Dry type .... Replace [24]
Oil bath .... Wash and fill MO [4]
Crankcase grade

Fuel Filter Element .... Replace [12]

TRANSMISSION, Automatic . AF

Check level, engine idling, NEUTRAL position .... [4]

CAPACITY, quarts	Initial Refill	Total Refill
1961	5	10
1962-63	5	9

DRAIN and REFILL
Remove 1 converter plug and disconnect fill pipe
1961-62 .... [24]
1963, not recommended

Front Wheel Bearings .... Repack WB
With wheel being rotated, initial torque, 20-25 ft. lb. Final adjustment, back off nut ⅙ turn, install cotter key
1961-62 [12] 1963 [24]

BRAKE ADJUSTMENT

1961: With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:

1. Using a suitable tool inserted into the adjustment opening in the backing plate, expand the shoes until the drum cannot be rotated by hand
2. Back off the adjuster 8 notches (10 notches if new linings are installed)
3. Repeat the procedure at each wheel

1962-63: Brakes are self-adjusting. No adjustment normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Using a suitable tool inserted into adjusting hole in backing plate, turn star wheel until drum is locked. (A second tool may be required to hold adjusting lever away from star wheel)
2. Back off star wheel 15-20 notches
3. Repeat steps 1 and 2 at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 2,000 miles
[4] Every 4,000 miles
[5] Every 5,000 miles
[8] Every 8,000 miles
[10] Every 10,000 miles
[12] Every 12,000 miles
[24] Every 24,000 miles
[32] Every 32,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
EP	Mild Extreme Pressure Gear Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease AMC Lithium Base Lubricant
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
WB	Wheel Bearing Grease

* For Twin-Grip differential, use AMC-approved lubricant

RAMBLER 6
1964-65 American

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	50
Air conditioning	24	60
Optional	24H	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

		psi
L-head engine	minimum	130
OHV engines	minimum	145

SPARK PLUGS

Champion: L-head, H-10; 196 OHV, H-18Y; 232 OHV, N-14Y
Gap: .033"-.037"
Torque: 25-30 ft. lb.

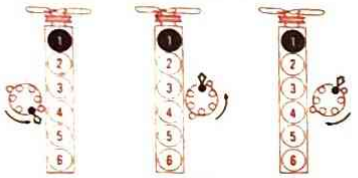
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



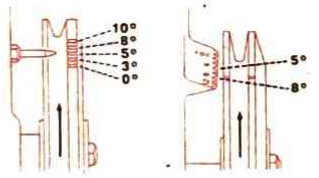
196 L-head　196 OHV　232 OHV

Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
6. Reset to proper idle speed

Timing Mark and Setting



L-head and 196 OHV　232 OHV

Timing Setting (Before Top Dead Center):
Regular fuel: L-head, 3°; 196 OHV: Manual Trans. 8°; Auto. Trans. 10°; 232 OHV, 5°
Premium fuel: L-head, 6°; 196 OHV: Manual Trans. 12°; Auto. Trans. 14°; 232 OHV, 8°

FUEL PUMP

Carter mechanical
Pressure: 4-5½ lb. at 500 rpm
Volume: 1 quart in 1 minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl RBS	¼-1¼	index	index
2-bbl. WCD	½-2	index	index
HOLLEY			
1-bbl. 1909	0-2¾	index	index

ENGINE IDLE SPEED

Manual Trans.: L-head 500 rpm; 196 OHV, 232 OHV 550 rpm
Auto. Trans.: L-head, 196 OHV 500 rpm; 232 OHV 550 rpm; in NEUTRAL
Air Cond. 500 rpm in NEUTRAL; unit turned ON

VALVE CLEARANCES

(engine hot and running)
196 OHV: Intake .012"; exhaust .016"

(engine cold, not running)
L-head: Intake .016"; exhaust .018"
232 OHV: Hydraulic lifters, non-adjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ... Quarts

	With Heater	Without Heater
196 OHV engine	11	10
232 OHV engine	10½	9½
L-head engine	12	11

Cooling system pressure, 14 pounds

★ **Battery** ... Test and fill

★ **Manual Steering Gear (plug)** ... 90 **EP**

8 **PCV System Valve** ... Wash **CC**
Right side on L-head engine. No valve on 196 OHV engine with 1-bbl. carburetor, clean hose
232 engine, on valve cover, rear

★ **Manifold Heat Control Valve Shaft** ... **MH**
232 engine only

8 **Oil Fill Cap** ... Wash and oil **MO**
232 engine, on valve cover
232 engine with closed PCV system, no service

Crankcase Dipstick ... Check level
196 engines, attached to oil fill cap. 232 engine, right side

★ **Brake Master Cylinder** (cover) ... **HB**
Fill to ¼ inch below top of reservoir

32 **Steering Linkage** 1965 only ... (4 plugs) **LM**
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Front Suspension Ball Joints** (2 lower plugs) **LM**
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Clutch Operating Lever** ... **LM**
Disassemble and repack both sides

32 **Gearshift Control Shaft** (under hood) ... **LM**
1964 only

★ **Transmission Shift Levers** ... **MO**

TRANSMISSION, Manual ... 80 GL

20,20W, 10W-30 MO or AF may be used
★ Maintain level to fill plug hole
CAPACITY 1½ pints; with overdrive, 2¾ pints
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

DIFFERENTIAL ... 90 MP*

★ Maintain level to fill plug hole
CAPACITY 3 pints
DRAIN and REFILL Not recommended
TWIN-GRIP IDENTIFICATION:
Metal tag under fill plug

GAS TANK ... Gallons

All models ... 16

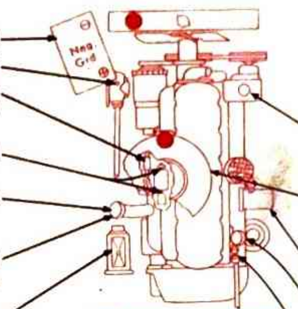
TIRES

Pressure	Front	Rear
6.00-14, 6.00-15, 6.50-14	24*	24*
6.45-14, 6.95-14, 6.85-15	24●	24●
Station wagon	24	26*

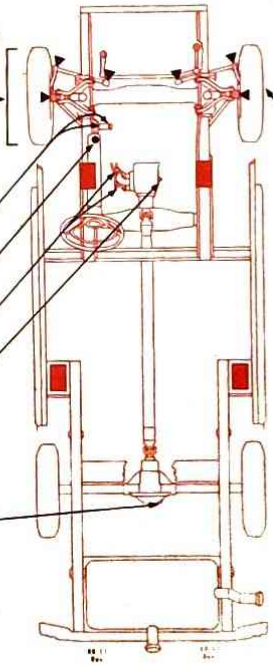
* Full load or extensive highway operation, 30
● Full load or extensive highway operation, front 26; rear 30

★ Rotate tires, Method A, then balance wheels
Every 4,000 to 8,000 miles if necessary

Chek Chart



196 OHV Engine Illustrated



CRANKCASE ... "MS" MO

Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W*	5W-20

* When using 5W, avoid sustained speeds above 65 mph

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Power Steering Reservoir ... AF ★
Fill reservoir until oil is halfway up filler neck

Air Cleaner Element ... Service
- Dry type ... Clean ★
  232 engine with closed PCV system, wash and oil polyurethane filter inside main housing
- Dry type ... Replace 24
- Oil bath ... Wash and fill MO ★
  Crankcase grade

Oil Filter ... Replace ★
Add extra quart oil. 1964 OHV engine, left side forward

Fuel Filter Element ... Replace 12
Forward on 232 engine

TRANSMISSION, Automatic ... AF

Check level, engine idling, NEUTRAL position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL Not recommended
Disconnect fill pipe

Front Wheel Bearings ... Repack **WB** 24
1964 models with car sequence numbers before E-31699 and W-27549: With wheel being rotated, initial torque 20-25 ft. lb. Final adjustment, back off nut ¼ turn, install new cotter pin. Others: With wheel being rotated, initial torque 20 ft. lb. Place nut retainer on adjusting nut so that two retainer tabs cover cotter pin hole in spindle. Back off nut and nut retainer together, to the second slot. This provides .001"-.006" end play. Install new cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes
Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Using a suitable tool inserted into adjusting hole in backing plate, turn star wheel until drum is locked
2. Back off star wheel 15-20 notches. (A second tool may be required to hold adjusting lever away from star wheel)
3. Repeat steps 1 and 2 at each wheel

Bleeding sequence: RR, LR, RF, LF

🟥	Position for lift adapter
▲	Prepacked bearing
•	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★	Every 4,000 miles
8	Every 8,000 miles
12	Every 12,000 miles
24	Every 24,000 miles
32	Every 32,000 miles or 3 years

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Su[illegible] A
CC	Carburetor Cleaner
EP	Mild Extreme Pressure Gear Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease AMC Lithium Base Lubricant
MH	Graphite mixed with kerosine
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
WB	Wheel Bearing Grease

* For Twin-Grip differential, use AMC-approved lubricant

RAMBLER 6

1961 All Models
Except American

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	45
Air conditioning	24H	60

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All . . . . minimum 145

SPARK PLUGS

Champion H-10
Gap: .033"-.037" (.035" preferred)
Torque: 25-30 ft. lb.

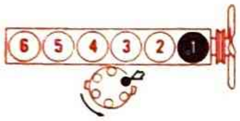
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 28°-35° (30° preferred)

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

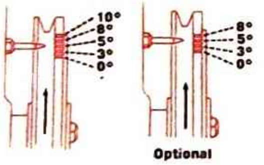


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
6. Reset to proper idle speed

Timing Mark and Setting



Optional

Timing Setting (Before Top Dead Center):
Regular fuel, 5°; Premium fuel, 8°

FUEL PUMP

Carter model MDOF-3025SA
Pressure: 4-5½ lb. at 500 rpm
Volume: 1 quart in 1 minute at 500 rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. AS	¼-1¼	—	index
2-bbl. WCD	½-1½	—	index
HOLLEY			
1-bbl. 1908	1	index	—

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 500 rpm in NEUTRAL
Air Cond. 500 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

(engine hot and running)
Iron block engine: Intake .012"; exhaust .016"
Aluminum block engine: Hydraulic lifters, non-adjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . Quarts

	With Heater	Without Heater
All models	10½	9½

Cooling system pressure, 13 pounds

4 **Oil Fill Cap** . . . . Wash and oil **MO**
Left side on cast-iron engine

5 **Generator** (2 oil cups) . . . . **MO**

★ **Battery** . . . . Test and fill

Air Cleaner Element . . . . Service
★ Dry type . . . . Clean
TY Dry type . . . . Replace
★ Oil bath . . . . Wash and fill **MO**
Above +32°, 40 or 50; below +32°, 20

★ **Steering Gear** (plug) . . . . **CL**

8 **PCV System Valve** . . . . Wash **CC**

Crankcase Dipstick . . . . Check level
Attached to oil fill pipe on cast-iron engine

★ **Manual Gearshift Control Lever** . . . . **CL**

★ **Throttle Linkage** . . . . **MO**
Oil wick and all pivot points

★ **Brake Master Cylinder** (plug) . . . . **HB**
Fill to ½ inch below top of fill hole

10 **Power Brake Air Cleaner Element** . . . . Wash

★ **Front Suspension and Steering Linkage** . . . . . (9 to 11 fittings) **CL**

★ **Clutch Operating Shaft** . . . . **CL**
Use low pressure

★ **Manual Transmission Shift Levers** . . . . **MO**

TRANSMISSION, Manual . . 80 GL

20,20W, 10W-30 MO or AF may be used
★ Maintain level to fill plug hole
CAPACITY 1½ pints; with overdrive, 2¾ pints
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

5 **Torque Tube** (fitting, top or bottom) . . . . **CL**
Manual and overdrive transmission models only

DIFFERENTIAL . . . . 90 MP*

★ Maintain level to fill plug hole
CAPACITY 3 pints
DRAIN and REFILL Not recommended
TWIN-GRIP IDENTIFICATION:
Metal tag under fill plug

GAS TANK . . . . Gallons

All models 20

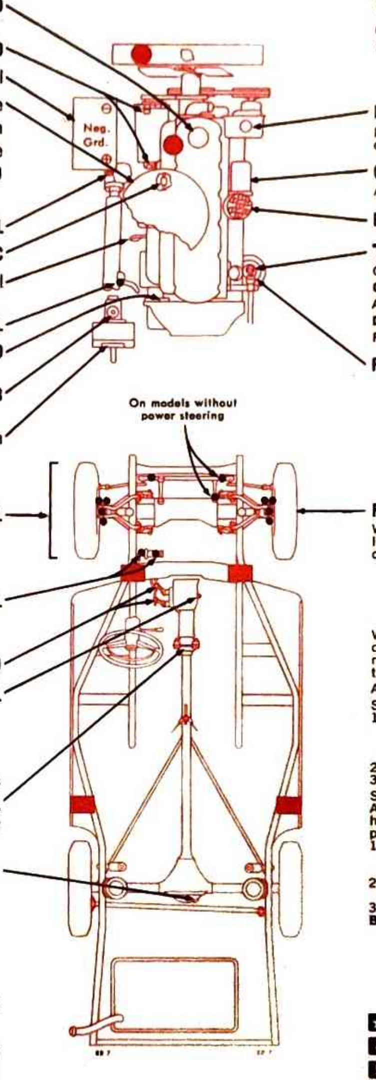
TIRES . . . . Pressure

	Front	Rear
6.50-15	24*	24*
6.70-15	24*	24*

* Full load or extensive highway operation, 30
Captive-Air tires: Inner chamber, 29; outer, 24. Trips of 50 miles or more with full load, inner chamber, 35; outer, 30

5 Rotate tires, Method A, then balance wheels
Captive-Air tires, Method C

Chek-Chart



CRANKCASE . . . . "MS" MO

Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W*	5W-20

* For lengthy highway operation, 10W
CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Power Steering Reservoir . . . . **AF** ★
Fill to 1 inch from top of reservoir or to bottom of filler neck

Oil Filter . . . . Replace **4**
Add extra quart oil. Left front on cast-iron engine

Distributor Shaft (plug) . . . . **MO** **10**

TRANSMISSION, Automatic . . AF

Check level, engine idling, NEUTRAL position . . . ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL **24**
Remove 1 converter plug and disconnect fill pipe

Fuel Filter Element . . . . Replace **12**

Front Wheel Bearings . . . . Repack **WB** **10**
With wheel being rotated, initial torque, 20-25 ft. lb. Final adjustment, back off nut ¼ turn, install cotter key

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:

Standard brakes
1. Using a suitable tool inserted into the adjustment opening in the backing plate, expand the shoes until the drum cannot be rotated by hand
2. Back off the adjuster 10 notches
3. Repeat the procedure at each wheel

Self-adjusting brakes
Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:
1. Use a slender tool inserted into the adjustment opening to hold adjusting lever away from the star wheel
2. Expand shoes until drum is contacted and back off adjuster until drag is eliminated
3. Repeat steps 1 and 2 at each wheel

Bleeding sequence: RR, LR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
5 Every 5,000 miles
8 Every 8,000 miles
10 Every 10,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
TY Twice yearly or every 10,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

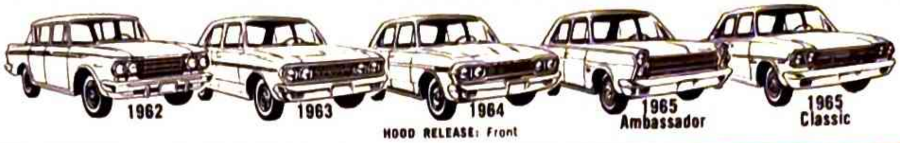
KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
WB	Wheel Bearing Grease

* For Twin-Grip differential, use AMC approved lubricant

RAMBLER 6

1962-65 Classic
1965 Ambassador



HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	50
Air conditioning	24	60
1963-65 Optional	24H	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) **psi**
All .... minimum **145**

SPARK PLUGS

Champion: 196 eng., H-14Y; 199, 232 engs., N-14Y
Gap: .033"-.037" (.035" preferred)
Torque: 25-30 ft. lb.

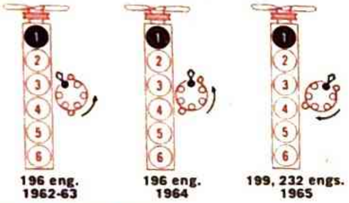
IGNITION POINTS

Delco
Gap: .016"
Dwell angle: 1962, 28°-35° (30° preferred)
1963-65, 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



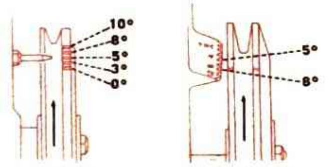
196 eng. 1962-63 — 196 eng. 1964 — 199, 232 engs. 1965

Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
6. Reset to proper idle speed

Timing Mark and Setting



196 eng. — 199, 232 engs.

Timing Setting (Before Top Dead Center):
196 engine, 1964 models, engine code numbers 510B30 and 510C30 and later: Regular fuel, 5°; Premium fuel, 12°
All other engines: Regular fuel, 5°; Premium fuel, 8°

FUEL PUMP

Carter mechanical
Pressure: 4-5½ lb. at 500 rpm
Volume: 1 quart in 1 minute at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. AS	¼-1¼	—	index
1-bbl. RBS	1-1¼	index	index
2-bbl. WCD	½-2	index	index
HOLLEY			
1-bbl. 1908	1	index	—
1-bbl. 1909	0-2¾	1 lean	—
1-bbl. 1931	*	index	index

* Type 2697-1, ¼-2¼; type 2880, ¾-1¼

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 550 rpm in NEUTRAL
Air Cond. 500 rpm in NEUTRAL with unit turned ON

VALVE CLEARANCES

(engine hot and running)

196, iron block engine: Intake .012"; exhaust .016"
196, aluminum block engine; 199, 232 engines: Hydraulic lifters, non-adjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	10½	9½

Cooling system pressure, 14 pounds

8 **Oil Fill Cap** .... Wash and oil **MO**
Left side on 196 cast-iron engine
With closed PCV system, no service

★ **Battery** .... Test and fill

★ **Steering Gear** (plug) .... **CL**
1965, fill thru cover cap screw marked "Check Lube"
1964-65 with power steering, no lubrication

Air Cleaner Element .... Service
★ Dry type .... Clean
With closed PCV system, wash and oil polyurethane filter inside main housing
24 Dry type .... Replace

★ **Manifold Heat Control Valve Shaft** .... **MH**
199, 232 engines only

Crankcase Dipstick .... Check level
Attached to oil fill pipe on 196 cast-iron engine
199, 232 engines, right side

★ **Throttle Linkage** .... **MO**
Oil wick and all pivot points

★ **Brake Master Cylinder** (cover or 2 caps) .... **HB**
1962, fill to ½ inch below top of fill hole; 1963-65, to ¼ inch below top of reservoir

32 **Pitman Arm Stud** .... (plug) **LM**
1962-63 with power steering only
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Steering Linkage** 1965 only ...... (4 plugs) **LM**
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Front Suspension Trunnions** (4 upper plugs) **SB**
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Front Suspension Ball Joints** (2 lower plugs) **LM**
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Clutch Operating Lever** (1 or 2 plugs) ...... **LM**
Lubricate using special adapter. Reinstall plug

32 **Gearshift Control Shaft** .... **LM**
1962-64 only

★ **Manual Transmission Shift Levers** .... **MO**

TRANSMISSION, Manual .. 80 GL

20,20W, 10W-30 MO or AF may be used
★ Maintain level to fill plug hole
CAPACITY 196, 199 engs. 1½ **pints**; with overdrive, 2¾ **pints**. 232 eng., 2¼ **pints**; with overdrive, 3½ **pints**
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole
With 232 eng., fill plug right side forward
CAPACITY 196, 199 engs., **3 pints**; 232 eng. **4 pints**
DRAIN and REFILL Not recommended
TWIN-GRIP IDENTIFICATION:
Metal tag under fill plug

GAS TANK

	Gallons
1962 all models	20
1963-65 3-seat station wagon	17
1963-65 all other models	19

TIRES

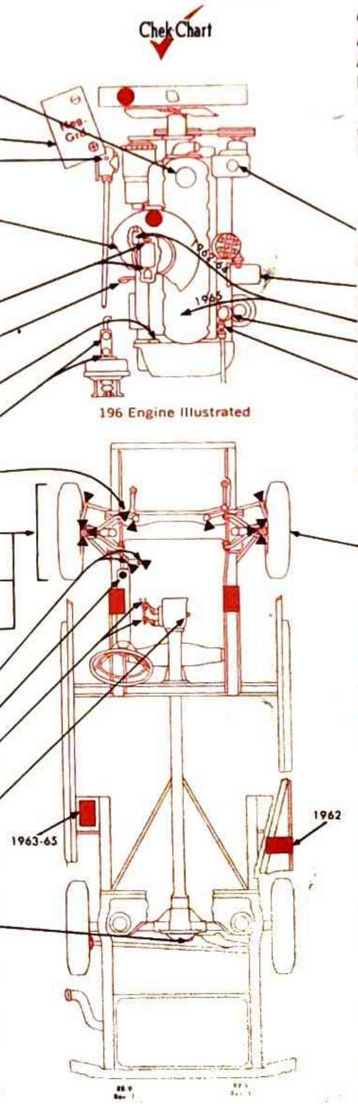
Pressure	Front	Rear
6.50-14, 7.00-14, 6.50-15, 6.70-15	24*	24*
6.95-14, 7.35-14, 7.75-14, 7.35-15	24●	24●†

* Full load or extensive highway operation, **30**
Captive-Air tires: Inner chamber, **29**; outer, **24**. Trips of 50 miles or more with full load, inner chamber, **35**; outer, **30**
LifeGuard tires: Normal operation, **24**; full load or extensive highway operation, **30**

● Classic except 2-seat wagon: Full load or extensive highway operation, front **26**, rear **30**

† Station wagons: 2-seat Classic, **26**. All Ambassador and 2-seat Classic, full load or extensive highway operation, **30**

★ Rotate tires, Method A, then balance wheels
Every 4,000 to 8,000 miles if necessary



🟥 Position for lift adapter
▲ Prepacked bearing
● Lubrication fitting
● Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W*	5W-20

* When using 5W, avoid sustained speeds above 65 mph

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Power Steering Reservoir .... **AF** ★
Fill reservoir until oil level is halfway up filler neck

Oil Filter .... Replace, add extra quart oil ★
Left front on 1962-64 196 cast-iron engine

PCV System Valve .... Wash **CC** 8

Fuel Filter .... Replace 12
Forward on 199, 232 engines

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL
1962, remove 1 converter plug and transmission plug; 1963-65, remove fill pipe
1962 24
1963-65 Not recommended

Front Wheel Bearings .... Repack **WB**
1962 12
1963-65 24

All 1962-63 models and 1964 models with car sequence numbers before E-31699 and W-27549: With wheel being rotated, initial torque 20-25 ft. lb. Final adjustment, back off nut ⅙ turn, install new cotter pin. Others: With wheel being rotated, initial torque 20 ft. lb. Place nut retainer on adjusting nut so that two retainer tabs cover cotter pin hole in spindle. Back off nut and nut retainer together, to the second slot. This provides .001" to .006" end play. Install new cotter pin

BRAKE ADJUSTMENT

Self-adjusting drum brakes: Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

Early 1962

1. Use a slender tool inserted into the adjustment opening to hold adjusting lever away from the star wheel
2. Expand shoes until drum is contacted and back off adjuster until drag is eliminated
3. Repeat steps 1 and 2 at each wheel

Late 1962, 1963-65

1. Using a suitable tool inserted into adjusting hole in backing plate, turn star wheel until drum is locked
2. Back off star wheel 15-20 notches
3. Repeat steps 1 and 2 at each wheel

Models with front disc brakes: Self adjusting. Replace pads when lining is ⅛ inch thick
Rear drum brakes, with disc at front: Self adjusting. If adjustment is required after relining, special procedure required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 4,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
32 Every 32,000 miles or 3 years

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

Code	Lubricant
AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease AMC Lithium Base Lubricant
MH	Graphite mixed with kerosine
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SB	AMC Sodium Base Lubricant
WB	Wheel Bearing Grease

* For Twin-Grip differential, use AMC-approved lubricant

RAMBLER V-8

1962-65 Ambassador; Classic

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	60
1963-65 Optional	24H	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All .... minimum 145

SPARK PLUGS

Champion H-14Y
Gap: .033"-.037" (.035" preferred)
Torque: 25-30 ft. lb.

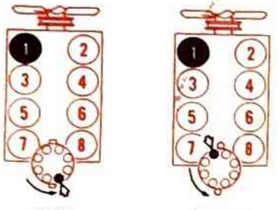
IGNITION POINTS

Delco, Prestolite
Gap: Delco .016"; Prestolite .018"-.022"
Dwell angle: 28°-32°

CONDENSER

Delco, Prestolite
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

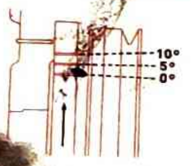


Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
6. Reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1962-[illegible] Ambassador:
Regular fuel: 2-bbl. carb., Manual Trans. TDC; Auto. Trans. 5°
Premium fuel: 2-bbl. carb., Manual Trans. 3°; Auto. Trans., 8°; 4-bbl. carb., 5°
1962-64 Classic:
Regular fuel: Manual and Auto. Trans. 5°
Premium fuel: Manual and Auto. Trans. 8°
1965 Ambassador, Classic:
287 eng. Regular fuel 5°; Premium fuel 8°
327 eng. Premium fuel 5°

FUEL PUMP

Carter mechanical
Pressure: 4-5½ lb. at 500 rpm
Volume: 1 quart in 1 minute or less at 500 rpm

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
2-bbl. 2300	1	index	index
4-bbl. 4150	½-1½	1 lean	1 lean
2-bbl. 2209	½-1½	index	index

ENGINE IDLE SPEED

Manual Trans. 550 rpm
Auto. Trans. 475* rpm in NEUTRAL
Air Cond. 500 rpm in NEUTRAL with unit turned ON
* 1964-65, 500 rpm

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

1962
1963
1964 Ambassador
1964 Classic
1965 Ambassador
1965 Classic

HOOD RELEASE: Front

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	19	18

Cooling system pressure, 14 pounds

★ **Power Steering Reservoir** .... AF
Fill to 1 inch from top of reservoir

★ **Steering Gear** (plug) CL
1965, fill thru cover cap screw marked "Check Lube"
1964-65 with power steering, no lubrication

8 **PCV System Valve** .... Wash CC

Crankcase Dipstick .... Check level
1962, right side

★ **Oil Filter** (under car) .... Replace
Add extra quart oil

★ **Throttle Linkage** .... MO
Oil wick and all pivot points

★ **Brake Master Cylinder** (cover or 2 caps).... HB
1962, fill to ½ inch below top of fill hole; 1963-65, to ¼ inch below top of reservoir

32 **Pitman Arm Stud** .... (plug) LM
1962-63 with power steering only
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Steering Linkage** 1965 only...... (4 plugs) LM
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Front Suspension Trunnions** (4 upper plugs) SB
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Front Suspension Ball Joints** (2 lower plugs) LM
Lubricate using special adapter. Reinstall plug
Severe service, every 12,000 miles or yearly

32 **Clutch Operating Lever** (1 or 2 plugs)....... LM
Lubricate using special adapter. Reinstall plug

32 **Gearshift Control Shaft** .... LM
1962-64 only

★ **Manual Transmission Shift Levers** .... MO

TRANSMISSION, Manual .. 80 GL

20,20W, 10W-30 MO or AF may be used
★ Maintain level to fill plug hole

CAPACITY 327 engine, 4 pints, with or without overdrive; 287 engine, 3½ pints, with or without overdrive

DRAIN and REFILL Not recommended
Overdrive, and extension housing on models without overdrive, drain and fill thru separate plug holes

DIFFERENTIAL .... 90 MP*

★ Maintain level to fill plug hole
1965, fill plug right side forward

CAPACITY 4 pints

DRAIN and REFILL Not recommended

TWIN-GRIP IDENTIFICATION:
Metal tag under fill plug

GAS TANK .... Gallons

	Gallons
1962 all models	20
1963-65 3-seat station wagon	17
1963-65 all other models	19

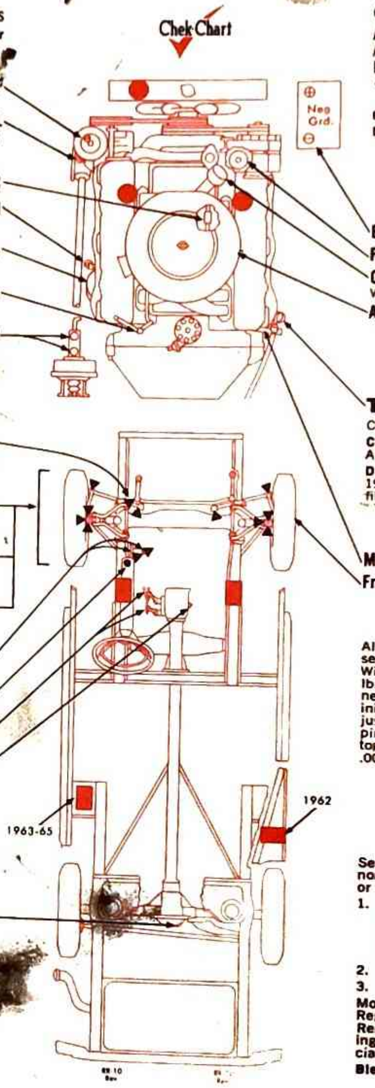
TIRES

Pressure	Front	Rear
7.50-14	24*	24*
8.00-14	22*	20*
7.35-14, 7.75-14	24●	24●

* Full load or extensive highway operation, **30**
Captive-Air tires: Inner chamber, **29**; outer, **24**
Trips of 50 miles or more with full load, inner chamber, **35**; outer, **30**
LifeGuard tires: Normal operation, **24**; full load or extensive highway operation, **30**

● Full load or extensive highway operation: Classic, front and rear **26**, except wagon rear, **30**; Ambassador, rear **30**

★ **Rotate tires, Method A, then balance wheels**
Every 4,000 to 8,000 miles if necessary



▬ Position for lift adapter
▲ Prepacked bearing
• Lubrication fitting
● Cooling system drain

CRANKCASE

	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	10W-30
Below 0°	5W*	5W-20

* When using 5W, avoid sustained speeds above 65 mph

CAPACITY 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Fuel Filter .... Replace 12
Oil Fill Cap .... Wash and oil MO 8
With closed PCV system, no service
Air Cleaner Element .... Service
Dry type .... Clean ★
With closed PCV system, wash and oil polyurethane filter inside main housing
Dry type .... Replace 24

TRANSMISSION, Automatic .. AF

Check level, engine idling, NEUTRAL position... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	6	11

DRAIN and REFILL
1962, remove 2 converter plugs and disconnect fill pipe; 1963-65, remove fill pipe
1962 24
1963-65 Not recommended

Manifold Heat Control Valve Shaft .... MH ★

Front Wheel Bearings .... Repack WB
1962 12
1963-65 24

All 1962-63 models and 1964 models with car sequence numbers before E-31699 and W-27549: With wheel being rotated, initial torque 20-25 ft. lb. Final adjustment, back off nut ⅙ turn, install new cotter pin. Others: With wheel being rotated, initial torque 20 ft. lb. Place nut retainer on adjusting nut so that two retainer tabs cover cotter pin hole in spindle. Back off nut and nut retainer together, to the second slot. This provides .001" to .006" end play. Install new cotter pin

BRAKE ADJUSTMENT

Self-adjusting drum brakes: Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, proceed as follows:

1. Using a suitable tool inserted into adjusting hole in backing plate, turn star wheel until drum is locked. (A second tool may be required to hold adjusting lever away from star wheel)
2. Back off star wheel 15-20 notches
3. Repeat steps 1 and 2 at each wheel

Models with front disc brakes: Self adjusting. Replace pads when lining is ⅛ inch thick
Rear drum brakes, with disc at front: Self adjusting. If adjustment is required after relining, special procedure required

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 4,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
32 Every 32,000 miles or 3 years

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease AMC Lithium Base Lubricant
MH	Graphite mixed with kerosine
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
SB	AMC Sodium Base Lubricant
WB	Wheel Bearing Grease

* For Twin-Grip differential, use AMC-approved lubricant

1959-60 Lark
1959 Hawk
1961 Lark
1962 Lark
1963 Lark

STUDEBAKER 6

1959-63 All Models

HOOD RELEASE: Front, Hawk; Inside, Lark

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	50

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
1959-60	130-150
1961-63	140-160

SPARK PLUGS

Champion: 1959-60, J-7; 1961-63, H-14Y
Gap: L-head, .030"; OHV, .035"
Torque: L-head, 30 ft. lb.; OHV, 25-30 ft. lb.

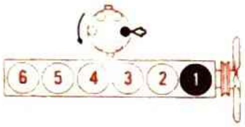
IGNITION POINTS

Autolite, Prestolite
Gap: 1959-61, .020"; 1962-63, .017"-.022"
Dwell angle: L-head, 38°-40°; OHV, 37°-41°

CONDENSER

Autolite, Prestolite — Capacity: .21-.25 mfd

Cylinder Numbering Sequence

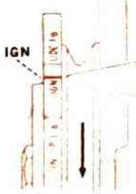


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 2°

FUEL PUMP

AC model: 1959 early to Serial No. 59S 68806, 5594703, 1959 late, 1960-63, 5594798

Pressure: 1959-60, 3½-5 lb.; 1961-63, 4-5½ lb.; at 1800 rpm

Volume: Minimum 1 pint in 30 seconds at 4000 rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. AS	1	index	index
1-bbl. RBS	1	index	index

ENGINE IDLE SPEED

Manual Trans. 550-600 rpm

Auto. Trans., 1959, 550 rpm; 1960-63, 575-590 rpm, in NEUTRAL

Air Cond. 590 rpm in NEUTRAL, unit turned ON

VALVE CLEARANCES

(engine cold, not running)
L-head: intake .018"; exhaust .018"

(engine hot and running)
OHV: intake .023"-.025"; exhaust .023"-.025"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Hawk	12½	11
Lark	12	11

Cooling system pressure, 13 pounds

5 Power Steering Reservoir 1961-63 .... AF
Fill to level indicated on cover

★ Battery .... Test and fill

★ Generator (2 oil cups) Not on 1963 .... MO

4 Oil Filter .... Replace, add extra quart oil
Some 1962, all 1963 at right rear of engine, under car

Distributor Shaft (oil cup) .... MO
5 1959-60 ★ 1961-63
10 Wick under rotor .... MO

Steering Gear (plug)
5 1961-63 Lark CL
For refill, Studebaker Lub. Part No. 50248
5 1959-60 Lark, except convertible ... 140 GL
Fill to level of top cap screw on left side of housing
5 1959-60 Hawk and convertible ...... 90 GL

★ Gearshift Rod Upper Ends .... MO

★ Gearshift Control Lever CL
Not on 1962 and 1963 with automatic transmission

★ Power Brake Cyl. Air Cleaner Element .. 10W MO
Wash and oil. 1963, no service

20 Power Brake Vacuum Cyl. 1959-60 (plug) 1 oz. VO

★ Front Suspension and Steering Linkage ..... (17 or 18 fittings) CL

★ Clutch Release Shaft CL

★ Pedal Shaft 1959-60 CL

★ Clutch Pedal Linkage .... MO

5 Brake Master Cylinder (plug) (thru floor) .... HB
1961-63 models, serviced from under hood
Fill to ½ inch below top of fill hole

TRANSMISSION, Manual .. GL, MO

80GL or 30MO
★ Maintain level to fill plug hole
CAPACITY 2¼ pints; with overdrive, 3¼ pints
10 DRAIN and REFILL
Overdrive, drain and fill thru separate plug holes

★ Parking Brake Linkage .... MO

20 Universal Joints .... Repack UJ

25 Rear Wheel Bearings .... Repack WB
Necessary to remove rear axle shafts

DIFFERENTIAL .... HP*, GL4*

Above 0°, 90; below 0°, 80
80 grade not recommended for year-round use
★ Maintain level to fill plug hole
CAPACITY 2½ pints
C DRAIN and REFILL
To drain 1960-63, remove cover plate
TWIN-TRACTION IDENTIFICATION:
TT insignia on rear of car. Some 1959, by red sticker on left front door just above lock. Also by metal tag stamped with number "45" attached to housing

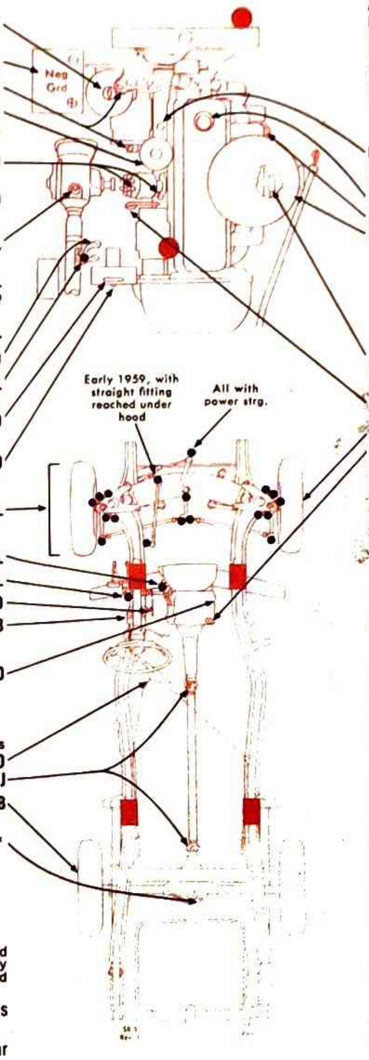
GAS TANK .... Gallons

All models 18

TIRES

Pressure	Front	Rear
5.90-15, 6.00-15, 6.40-15, 6.50-15, 6.70-15	24	20
5.90-15, 6.00-15, 6.40-15, 6.50-15, station wagon	26	26
Captive-Air 6.40-15, station wagon	24	24
Captive-Air 6.50-15, 6.70-15, other models	24	22
All, sustained high speeds	30	30

4 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C



■ Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE .... "MS" MO

1959-early 1962 (Bypass filter)

Above +32°	30	10W-30*
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

*20W-40 for severe service
Late 1962 and 1963 (Full-flow filter), recommendations same as for 1964. See Chart SR-8
CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Breather Element .... Wash **10**
1961, at rear right side of engine
Not on models with PCV system

Oil Fill Cap .... Wash and oil MO ★

Fuel Filter Element 1960-63 .... Replace **10**

Air Cleaner Element .... Service
Dry type .... Clean
1959-62 ★ 1963 **4**
Dry type .... Replace
1959-62 **10** 1963 **20**
Oil bath .... Wash and fill MO ★
Above +32°, 40 or 50; below +32°, 20

PCV System Valve .... CC **10**
Remove and clean valve. More frequently if required

Crankcase Dipstick .... Check level

Front Wheel Bearings .... Repack WB **10**

TRANSMISSION, Automatic .. AF

1961-63 models, dipstick under hood
Check level, engine idling, DRIVE position, except 1963 Model 35, P or N position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	3*	9

*Immediately after engine is started, add 4 quarts
DRAIN and REFILL
1959-62 Flightomatic **15**
1963 Flightomatic ex. Model 35 .... **20**
1963 Flightomatic Model 35 .... **C**
Remove converter plug and transmission plug except 1961-63, remove fill tube

BRAKE ADJUSTMENT

1959-62
With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1. Use a suitable tool inserted into the adjustment opening to expand the shoes until they are locked against the drum
2. Back off the adjustment 8 or more notches until the drum turns freely without drag
3. Repeat procedure at each wheel

1963: Brakes are self-adjusting. No adjustment normally required
Optional: Disc brakes on front, self-adjusting. Replace front linings when worn to ¼" thickness. Drum brakes on rear, adjust as indicated on Chart SR-8
Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake first, then Hill-Holder, then wheel cylinders

KEY TO INTERVALS

★ **Every 1,000 miles**
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
5 Every 5,000 miles
10 Every 10,000 miles
15 Every 15,000 miles
20 Every 20,000 miles or yearly
25 Every 25,000 miles
C Conditional service
Drain and refill differential only for below 0° requirements
Drain and refill 1963 Flightomatic Model 35 transmission only if required by operating conditions

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
GL4*	Multipurpose-Type Gear Lubricant API Service GL4
HB	Hydraulic Brake Fluid, Heavy-Duty
HP*	Hypoid Gear Lubricant
MO	Motor Oil
UJ	Universal Joint Grease
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease

* For Twin-Traction differential, use Studebaker Twin-Traction Lubricant

STUDEBAKER 6
1964-65 All Models

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24	53

COMPRESSION PRESSURE

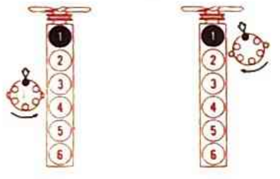
(at cranking speed with throttle open)	psi
1964	140-160
1965	130

SPARK PLUGS
1964 Champion H-14Y; 1965 AC 46N; For continuous heavy duty operation, 44N
Gap: .033"-.038" (.035" preferred)
Torque: 1964, 25-30 ft. lb.; 1965, 25 ft. lb.

IGNITION POINTS
Prestolite, Delco
Gap: Prestolite .017"-.022"; Delco .016" used; .019" new
Dwell angle: Prestolite 37°-41°; Delco 31°-34°

CONDENSER
Prestolite, Delco
Capactiy: Prestolite .21-.25 mfd; Delco .18-.23 mfd

Cylinder Numbering Sequence

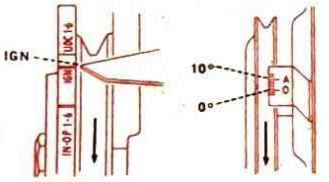


1964 1965

Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL (1964, 550 rpm; 1965, 500 rpm)
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line, reset idle speed

Timing Mark and Setting



1964 1965

Timing Setting (Before Top Dead Center):
1964, 2°; 1965, 8°

FUEL PUMP
AC model: 1964, 4798; 1965, model 6760
Pressure: 1964, 4-5½ lb. at 1800 rpm; 1965, 3½-4¼ lb. at idle to 1000 rpm
Volume: 1964, Minimum 1 pint in 30 seconds at 4000 rpm. 1965, 1 pint in 30-45 sec. at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. RBS	1	index	index
ROCHESTER			
1-bbl. BV	1½	*	*

* One rod dia. above hole in choke lever

ENGINE IDLE SPEED
1964: Manual Trans. 550-600 rpm
Auto. Trans. 575-590 rpm; in NEUTRAL
Air Cond. 590 rpm in NEUTRAL, unit ON
1965: Manual Trans. 450-500 rpm
Auto. Trans. 500 rpm in DRIVE

VALVE CLEARANCES
(engine hot and running)
1964: Intake .023"-.025"; exhaust .023"-.025"
1965: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
1964	12	11
1965	13½	12½

Cooling system pressure, 13 pounds

★ **Power Steering Reservoir** 1964 only .... **AF**
Fill to level indicated on cover

OC **Battery** .... Test and fill

Air Cleaner Element .... Service
6 Dry type .... Clean
Models with closed PCV system, clean flame arrester inside air cleaner housing
C Dry type .... Replace
OC Oil bath .... Wash and fill **MO**
Above +32°, 40 or 50; below +32°, 20

C **Manifold Heat Control Valve** 1965 ..... **MH,CC**

★ **Steering Gear** (plug) .... **CL**
For refill, use Studebaker Lubricant Part No. 50248

OC **Brake Master Cylinder** .... **HB**
Fill to ½ inch below top of reservoir

★ **Gearshift Control Lever** .... **CL**
Not on automatic transmission

Front Suspension and Steering Linkage (11 or 13 fittings; 5 or 6 plugs) CL
★ Fittings
24 Plugs
Remove plug, insert fitting to lubricate, reinstall plug

★ **Clutch Release Shaft** .... **CL**

★ **Clutch Pedal Linkage** .... **MO**

TRANSMISSION, Manual . . GL, MO
80GL or 30MO
★ Maintain level to fill plug hole
CAPACITY 2¼ pints; with overdrive, 4 pints
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

★ **Parking Brake Linkage** .... **MO**

Universal Joints .... Repack **UJ**
Not recommended under normal service
30 Severe service

24 **Rear Wheel Bearings** .... Repack **WB**
Necessary to remove axle shafts

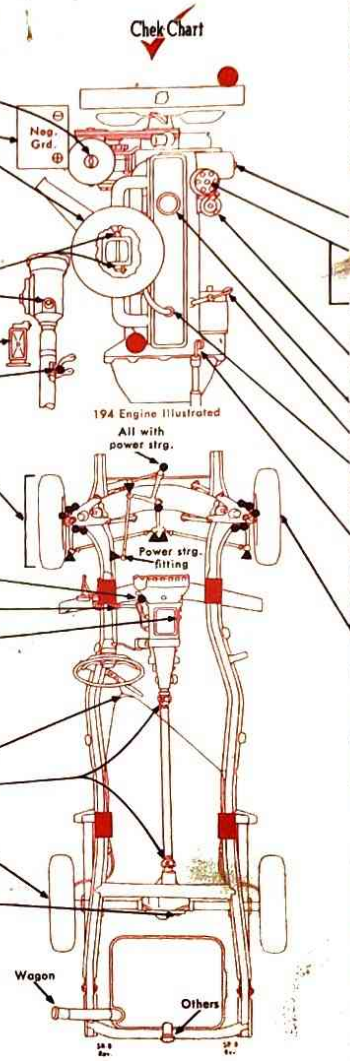
DIFFERENTIAL .... HP*, GL4*
Above 0°, 90; below 0°, 80
80 grade not recommended for year-round use
★ Maintain level to fill plug hole
CAPACITY 2½ pints
C **DRAIN and REFILL**
To drain, remove cover plate
TWIN-TRACTION IDENTIFICATION:
Metal tag stamped with number "45" attached to housing

GAS TANK .... Gallons
All models 18

TIRES ....Pressure	Front	Rear
6.00-15, 6.50-15	24	20
Fixed-roof station wagon	26	26
Sliding-roof station wagon	24	24
6.50-15 LifeGuard	24	24
6.70-15 LifeGuard	24	22
7.35-15, 7.75-15 ex. wagon	24*	20*
7.35-15 wagon	24*	24*
7.75-15 wagon	26	26
All, sustained high speeds	30	30

* 4 or more passengers, front and rear, 26

★ Rotate tires, Method B, then balance wheels
LifeGuard tires, Method C



🟥 Position for lift adapter
▲ Prepacked bearing
• Lubrication fitting
● Cooling system drain

CRANKCASE	"MS" MO	
Above +32°	20W†	10W-30†
Above 0°	10W	10W-30,5W-20‡
Below 0°	5W*	5W-20*

* When using 5W, avoid sustained speeds above 60 mph
† 1964 models, above +80° use 30, 10W-30 or 20W-40
‡ 5W-20 recommended for 1965 models only. 1964 models may use 10W-20
CAPACITY 1964, 5 quarts; 1965, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Filter .... Replace 6
Add extra quart oil 1964, right rear, under car

Distributor Cam Lubricator 1965
Rotate 180° 12
Replace 24

Distributor Shaft (oil cup) 1964 .... **MO** ★
Wick under rotor 1964 .... **MO** ★
Located left side center

Fuel Filter Element 1964 .... Replace ★
1965 located in carburetor inlet. Check, clean if required

Oil Fill Cap .... Wash and oil **MO** ★
With closed PCV system, sealed cap, no service

Crankcase Dipstick .... Check level
1964, left side center

PCV System Valve .... **CC** ★
Remove and clean or replace valve. Under favorable conditions, every 12,000 miles. 1964, right side, center of manifold. 1965 with closed PCV system, no valve; clean metered orifice and hose

TRANSMISSION, Automatic . . AF
Check level, engine idling. P or N position ...... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	3*	9

* Immediately after engine is started, add 4 quarts
DRAIN and REFILL C
Remove fill tube

Front Wheel Bearings .... Repack **CL** 12
Under favorable conditions, every 24,000 miles. If conventional wheel bearing grease is used, reduce interval to 10,000 miles

BRAKE ADJUSTMENT
Standard equipment, drum brakes front and rear: Brakes are self-adjusting. No adjustment normally required
Optional, disc brakes on front: Self-adjusting. Replace front linings when worn to ¼" thickness
Drum brakes on rear (with disc type on front), adjust as follows:
1. Loosen adjusting screw lock nut slightly
2. Use two wrenches, one on lock nut and one on adjusting screw. With wrenches pointing upward, rotate wrenches outward, away from axle, until a drag is felt as wheel is turned
3. Back off adjusting screw until wheel turns freely without drag
4. Hold adjusting screw stationary and tighten lock nut
5. Repeat steps 1, 2, 3 and 4 on other adjusting screw
6. Repeat steps 1, 2, 3, 4 and 5 on other rear wheel

Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake first, then wheel cylinders

KEY TO INTERVALS
★ **Every 6,000 miles**
6 **Every 6 months or 6,000 miles**
12 **Every 12,000 miles**
24 **Every 24,000 miles**
30 **Every 30,000 miles**
OC **Every crankcase oil change**
C **Conditional service**
Replace dry type air cleaner element when cleaning is not sufficient to maintain efficiency, but not to exceed 24,000 miles or 2 years
Lubricate manifold heat control valve if shaft is not free
Drain and refill differential only for below 0° requirements
Drain and refill automatic transmission only when used under severe service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CC Carburetor Cleaner
CL Chassis Lubricant
Studebaker Spec. No. MS-939
If conventional chassis lubricant is used, reduce interval to 1,000 miles
GL Straight Mineral Gear Lubricant
GL4* Multipurpose-Type Gear Lubricant
API Service GL4
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP* Hypoid Gear Lubricant
MH Mixture of kerosine and soda
MO Motor Oil
UJ Universal Joint Grease
WB Wheel Bearing Grease
Studebaker Spec. No. MS-939

* For Twin-Traction differential, use Studebaker Twin-Traction Lubricant

1961 Lark
1962 Lark
1962 Hawk
1963 Lark Cruiser
1963 Hawk

STUDEBAKER V-8

1959-63 Cruiser, Hawk, Lark

HOOD RELEASE: Inside except 1959-62 Hawk, Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	50

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
Jet Thrust (JT)	185-195
Jet Thrust Supercharged (JTS)	160-170
Others	140-160

SPARK PLUGS

Champion: Jet Thrust, Supercharged, normal driving, J-12Y; high-speed driving, J-10Y; others, H-14Y
Gap: .035"
Torque: 30 ft. lb.

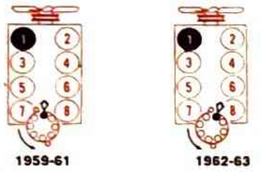
IGNITION POINTS

Autolite, 1962; Delco, 1959-61; Prestolite, 1963
Gap: 1959-61, .013"-.018"; 1962, 1963 ex. JT, JTS eng., .014"-.019"; 1963 JT, JTS, .019"
Dwell angle: 1959, 28°-34°; 1960-61, 28°-32°; 1962-63 ex. 1963 JT, JTS eng., single or each set of dual points, 27°-31°, dual points, total dwell, 36°-42°; 1963 JT, JTS eng., each set, 22°-26°, total dwell, 32°-36°

CONDENSER

Autolite, 1962; Delco, 1959-61; Prestolite, 1963
Capacity: 1959-61, .18-.23 mfd; 1962-63, .21-.25 mfd

Cylinder Numbering Sequence



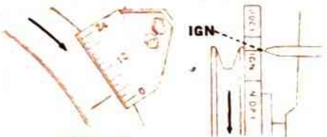
Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed* with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

* JTS, 1600 rpm

Timing Mark and Setting



Jet Thrust
Jet Thrust Supercharged

Others

Timing Setting (Before Top Dead Center):
Jet Thrust, 4° at idle rpm
Jet Thrust Supercharged, 24° at 1600 rpm
(Each line equals 2°)
Others, 4° at idle rpm

FUEL PUMP

Carter model: 1959 early to Serial No. V444791, M-2573SA; 1959 late, 1960-61, M-2573S; 1962-63, Lark, MF-3155S, Hawk, M-2573SA; JT, M-3509S; JTS, M-3508S
Pressure: 1959-60, 3½-5 lb.; 1961-63, 4-5½ lb.; at 1800 rpm; 1963 JT, JTS, 5½-7 lb. at 1000 rpm
Volume: Minimum 1 pint in 15 seconds (JT, JTS); 30 seconds (other engines). JT, JTS at idle rpm; others at 4000 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. WCFB	1	1 rich	1 rich
JT, JTS 4-bbl. AFB	1	index	index
STROMBERG			
2-bbl. WW	1¼	index	index

ENGINE IDLE SPEED

Manual Trans. 550-575 rpm*
Auto. Trans. 550 rpm* in NEUTRAL
Air Cond. 550 rpm in NEUTRAL, unit turned ON
* JT, JTS engines: Manual Trans. 650 rpm; Auto. Trans. 650 rpm in NEUTRAL

VALVE CLEARANCES

(engine hot and running)
JT, JTS engines: Intake .025"-.027"; exhaust .025"-.027"
Others: Intake .023"-.025"; exhaust .023"-.025"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
Hawk	18½	17
Lark, Cruiser	18	17

Cooling system pressure, 13 pounds

★ **Battery** At rear on Hawk .... Test and fill
10 **Fuel Filter Element** 1960-63 .... Replace
5 **Power Steering Reservoir** .... AF
Fill to level indicated on reservoir or cover
★ **Power Brake Cyl. Air Cleaner Element** . 10W **MO**
1961-62, at rear. Wash and oil. 1963, no service
20 **Power Brake Vacuum Cyl.** (plug) ..... 1 oz. **VO**
On 1959-60 Lark, 1959-62 Hawk, 1963 Hawk with disc brakes

Steering Gear (plug)
5 1961-63 Lark, 1963 Cruiser .... **CL**
For refill, Studebaker Lub. Part No. 50248
5 Some 1959 Hawk with power steering 90 **MP**
5 All other models .... 90 **GL**

Distributor Shaft (oil cup) .... **MO**
5 1959; 1960-61 Hawk ★ Others
10 Wick under rotor, some models .... **MO**
5 Felt under plate, 1959; 1960-61 Hawk* . **MO**
★ **Gearshift Rod Upper Ends** .... **MO**
★ **Gearshift Control Lever** .... **CL**
★ **Front Suspension and Steering Linkage** ..... (17 or 18 fittings) **CL**
★ **Clutch Release Shaft** .... **CL**
★ **Pedal Shaft** Hawk, 1959-60 Lark .... **CL**
★ **Clutch Pedal Linkage** .... **MO**
5 **Brake Master Cylinder** (plug) (thru floor) .... **HB**
1963 Hawk with disc brakes, 1961-63 Lark, 1963 Cruiser, under hood
Fill to ½ inch below top of fill hole

TRANSMISSION, Manual

★ Maintain level to fill plug hole
4-speed .... 80 **GL**
CAPACITY 2½ pints
Others .... **GL, MO**
80GL or 30MO
CAPACITY 3¾ pints; with overdrive, 4 pints
10 DRAIN and REFILL
Overdrive, drain and fill thru separate plug holes

★ **Parking Brake Linkage** .... **MO**
20 **Universal Joints** .... Repack **UJ**
25 **Rear Wheel Bearings** .... Repack **WB**
Necessary to remove axle shafts

DIFFERENTIAL .... HP*, GL4*

Above 0°, 90; below 0°, 80
80 grade not recommended for year-round use
★ Maintain level to fill plug hole
CAPACITY 2½ pints, except 1960-63 Hawk, 1963 Cruiser and all station wagons, 3 pints
C DRAIN and REFILL
To drain 1960-63, remove cover plate
TWIN-TRACTION IDENTIFICATION:
TT insignia on rear of car. Some 1959, by red sticker on left front door just above lock. Also by metal tag stamped with number "45" attached to housing

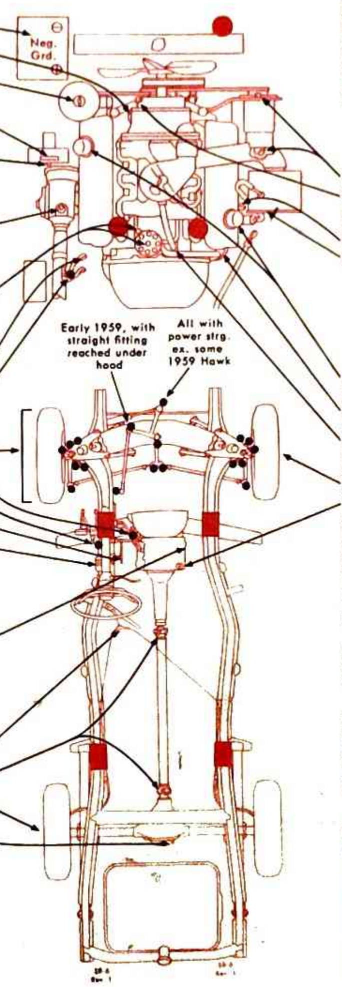
GAS TANK

	Gallons
All models	18

TIRES

Pressure	Front	Rear
6.40-15, 6.50-15, 6.70-15	24	20
Station wagon	24	24
6.70-15, 4 or more passengers	26	26
Captive-Air 6.70-15, station wagon	24	24
All, sustained high speeds	30	30

4 Rotate tires, Method B, then balance wheels
Captive-Air tires, Method C


Neg. Grd.
Early 1959, with straight fitting reached under hood
All with power strg. ex. some 1959 Hawk

CRANKCASE

	"MS"	MO
1959-early 1962 (Bypass filter)		
Above +32°	30	10W-30*
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

*20W-40 for severe service
Late 1962 and 1963 (Full-flow filter), recommendations same as for 1964. See Chart SR-9
CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Generator (2 oil cups) Not on 1963 .... **MO** ★
Supercharger .... **AF**
Maintain level between marks on dipstick .... ★
DRAIN and REFILL 15
Crankcase Dipstick .... Check level
Air Cleaner Element .... Service
Dry type .... Clean
1959-62 ★ 1963 4
Dry type .... Replace
1959-62 10 1963 20
Oil bath .... Wash and fill **MO** ★
Above +32°, 40 or 50; below +32°, 20
Oil Fill Caps .... Wash and oil **MO** ★
1959-62 cap, at center of engine, forward
Oil Filter .... Replace, add extra quart oil 4
1959-62, on left side of engine, forward
PCV System Valve .... **CC** 10
Remove and clean valve. More frequently if required
Front Wheel Bearings .... Repack **WB** 10

TRANSMISSION, Automatic .. AF

1961 Lark and 1962-63 models, dipstick under hood
Check level, engine idling, DRIVE position ...... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	3*	9◆

*Immediately after engine is started, add 4 quarts
◆ With heavy-duty, water-cooled transmission, 9½ quarts
DRAIN and REFILL
1959-62 15 1963 20
Remove converter plug and transmission plug, except 1961 Lark and 1962-63 models, remove fill tube

BRAKE ADJUSTMENT

1959-62
With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:

1. Use a suitable tool inserted into adjustment opening to expand shoes until they are locked against drum
2. Back off the adjustment 8 or more notches until drum turns freely without drag
3. Repeat procedure at each wheel

1963: Brakes are self-adjusting. No adjustment normally required
Optional: Disc brakes on front, self-adjusting. Replace front linings when worn to ¼" thickness. Drum brakes on rear, adjust as indicated on Chart SR-9

Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake first, then Hill-Holder, then wheel cylinders

KEY TO INTERVALS

★ Every 1,000 miles
4 Every 4,000 miles
Oil Filter: Every 4,000 miles or 6 months
5 Every 5,000 miles
10 Every 10,000 miles
15 Every 15,000 miles
20 Every 20,000 miles or yearly
25 Every 25,000 miles
C Conditional service
Drain and refill differential only for below 0° requirements

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automa[illegible]mission Fluid, Type A,[illegible]
CC	Carbure[illegible]ner
CL	Chassis[illegible]nt
GL	Straight[illegible]l Gear Lubricant
GL4*	Multipurpose-Type Gear Lubricant API Service GL4
HB	Hydraulic Brake Fluid, Heavy-Duty
HP*	Hypoid Gear Lubricant
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
UJ	Universal Joint Grease
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease

* For Twin-Traction differential use Studebaker Twin-Traction Lubricant

STUDEBAKER V-8

1964-65 All Models Except Avanti

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	53

COMPRESSION PRESSURE

(at cranking speed with throttle open)

		psi
1964	Jet Thrust (JT)	185-195
	Jet Thrust Supercharged (JTS)	160-170
	Others	140-160
1965		150

SPARK PLUGS

1964: Champion J-12Y Jet Thrust, Supercharged; High-speed driving J-10Y. Others H-14Y
1965: AC 45; for heavy duty operation, AC 44
Gap: JT, JTS engines, .030"; Others, .033"-.038"
Torque: 1964, 30 ft. lb.; 1965, 25 ft. lb.

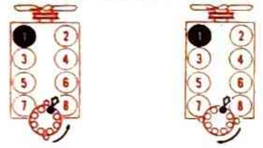
IGNITION POINTS

Delco, Prestolite
Gap: 1964 JT, JTS engines, .019"; Others, .014"-.019"; 1965 .016" used; .019" new
Dwell angle: 1964 JT, JTS engines, each set of dual points, 22°-26°, total dwell, 32°-36°; Others, 27°-31°, 1965, 28°-32°

CONDENSER

Capacity: Prestolite .21-.25 mfd; Delco .18-.23 mfd

Cylinder Numbering Sequence



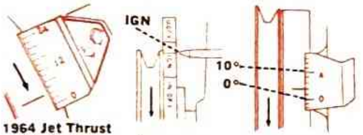
Firing Order: 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect dist. vac. line and tape opening
5. Set idle speed* with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line, reset idle speed

* JTS, 1600 rpm; 1965 at 500 rpm

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1964: Jet Thrust Supercharged, 24° at 1600 rpm
1964: Others, 4° at idle rpm
1965: 4° (Range 3°-5°)
(each line equals 2°)

FUEL PUMP

1964, Carter model: JT, M-3509S; JTS, M-3508S; Others, 3155SA; 1965, AC model 6942
Pressure: 1964 JT, JTS, 5½-7 lb. at 1000 rpm; Others, 4-5½ lb. at 1800 rpm; 1965, 5¼-6½ lb. at idle to 1000 rpm
Volume: 1964 Minimum 1 pint; JT, JTS in 15 seconds at idle rpm; Others in 30 seconds at 4000 rpm. 1965, 1 pint in 30-45 sec. at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
4-bbl. AFB	1	index	index
STROMBERG			
2-bbl. WW	1¼	index	index
ROCHESTER			
2-bbl. 2GV	1½	*	*

* One-half rod dia. above hole in choke lever

ENGINE IDLE SPEED

1964: Man. Trans. JT, JTS 650 rpm; Others 550-575
Auto. Trans. in NEUTRAL: JT, JTS 650 rpm; Others 550 rpm
Air Cond. in NEUTRAL with unit turned ON: JT, JTS, 650 rpm; Others, 550 rpm
1965: Manual Trans. 450-500 rpm
Auto. Trans. 500 rpm in DRIVE

VALVE CLEARANCES

(engine hot and running)

1964: JT, JTS engs. In. & Ex. 025"-027"
Others, In. & Ex. .023"-.025"
1965: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . Quarts

	With Heater	Without Heater
1964	18	17
1965	16	15

Cooling system pressure, 13 pounds

[OC] **Battery** At rear on Hawk . . . . Test and fill

★ **Fuel Filter Element** 1964 . . . . Replace
1965 located in carburetor inlet. Check, clean if required

★ **Power Steering Reservoir** . . . . AF
1964, fill to level indicated on reservoir or cover
1965, fill to full mark on gage

[24] **Power Brake Vacuum Cylinder** (plug) 1 oz. . . VO
On Hawk only

Crankcase Dipstick . . . . Check level
1964, right side

Steering Gear (plug)
★ All except Hawk CL
For refill, use Studebaker Lubricant Part No. 50248
★ Hawk . . . . 80 or 90 GL

[OC] **Brake Master Cylinder** . . . . HB
Fill to ½ inch below top of reservoir
Hawk without disc brakes, under floor, rear of pedal

★ **Gearshift Control Lever** CL
Not on automatic transmission

[6] **Oil Filter** (under car) Replace, add extra quart oil
1964, right side

Distributor Cam Lubricator 1965 . . . .
[12] Rotate, end for end
[24] Replace

★ **Distributor Shaft** (oil cup) 1964 . . . . MO
★ Wick under rotor 1964 . . . . MO

Front Suspension and Steering Linkage (11 or 13 fittings; 5 or 6 plugs) CL
★ Fittings
[24] Plugs
Remove plug, insert fitting to lubricate, reinstall plug

★ **Clutch Release Shaft** CL
★ **Pedal Shaft** Hawk only CL
★ **Clutch Pedal Linkage** . . . . MO

TRANSMISSION, Manual

★ Maintain level to fill plug hole
4-speed . . . . 80 GL
CAPACITY 2½ pints
Others . . . . GL, MO
80GL or 30MO
CAPACITY 3¾ pints; with overdrive, 4 pints
DRAIN and REFILL Not recommended
Overdrive, drain and fill thru separate plug holes

★ **Parking Brake Linkage** . . . . MO

Universal Joints . . . . Repack UJ
Not recommended under normal service
[30] Severe service

[24] **Rear Wheel Bearings** . . . . Repack WB
Necessary to remove axle shafts

DIFFERENTIAL . . . . HP*, GL4*

Above 0°, 90; below 0°, 80
80 grade not recommended for year-round use
★ Maintain level to fill plug hole
CAPACITY 1964, 2½ pints, except Hawk and all station wagons, 3 pints; all 1965, 3 pints
[C] **DRAIN and REFILL**
To drain, remove cover plate
TWIN-TRACTION IDENTIFICATION:
Metal tag stamped with number "45" attached to housing

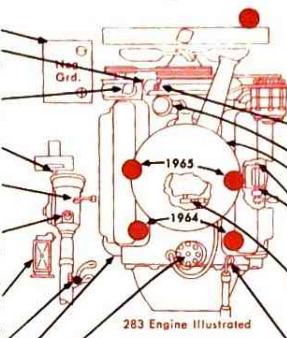
GAS TANK . . . . Gallons

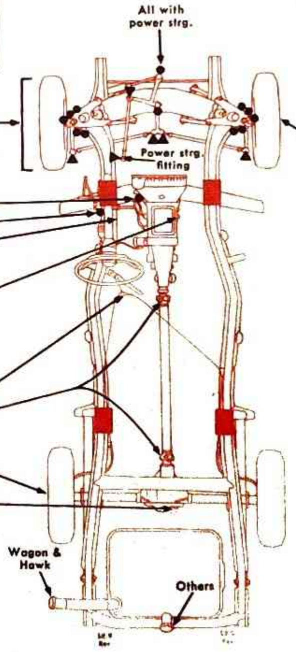
All models 18

TIRES

Pressure	Front	Rear
6.50-15, 6.70-15	24	20
Station wagon	24	24
6.70-15 LifeGuard, station wagon	24	22
7.35-15, 7.75-15 ex. wagon	24	20
7.35-15 wagon	24	24
7.75-15 wagon	26	26
All, 4 or more passengers	26	26
All, sustained high speeds	30	30

★ Rotate tires, Method B, then balance wheels
LifeGuard tires, Method C





🟥 Position for lift adapter
▲ Prepacked bearing
● Lubrication fitting
● Cooling system drain

CRANKCASE . . . . "MS" MO

Above +32°	20W†	10W-30†
Above 0°	10W	10W-30,5W-20‡
Below 0°	5W*	5W-20

* When using 5W, avoid sustained speeds above 60 mph
† 1964 models, above +80° use 30, 10W-30 or 20W-40
‡ 5W-20 recommended for 1965 models only. 1964 models may use 10W-20

CAPACITY 1964, 5 quarts; 1965, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Supercharger Some 1964 only . . . . AF
Maintain level between marks on dipstick . . . . . . [OC]
DRAIN and REFILL . . . . [12]

Oil Fill Cap . . . . Wash and oil MO ★
With closed PCV system, sealed cap, no service
1964, 2 caps, located on valve covers

Air Cleaner Element . . . . Service
Dry type . . . . Clean [6]
Models with closed PCV system, clean flame arrester inside air cleaner housing
Dry type . . . . Replace [C]
Oil bath . . . . Wash and fill MO [OC]
Above +32°, 40 or 50; below +32°, 20

Manifold Heat Control Valve 1965 . . . . . MH,CC [C]

PCV System Valve . . . . CC ★
Remove and clean or replace valve. Under favorable conditions, every 12,000 miles. 1964 at rear of engine. 1965 with closed PCV system, no valve; clean metered orifice and hose

TRANSMISSION, Automatic . . AF

Check level, engine idling, DRIVE position . . . . . ★

CAPACITY, quarts	Initial Refill	Total Refill
1964	3*	9
1965	3*	9½

* Immediately after engine is started, add 4 quarts
DRAIN and REFILL . . . . [C]
Remove fill tube

Front Wheel Bearings . . . . Repack CL [12]
Under favorable conditions, every 24,000 miles. If conventional wheel bearing grease is used, reduce interval to 10,000 miles

BRAKE ADJUSTMENT

Standard equipment, drum brakes front and rear: Brakes are self-adjusting. No adjustment normally required
Optional, disc brakes on front: Self-adjusting. Replace front linings when worn to ¼" thickness
Drum brakes on rear (with disc type on front), adjust as follows:

1. Loosen adjusting screw nut slightly
2. Use two wrenches, one on lock nut and one on adjusting screw. With wrenches pointing upward, rotate wrenches outward, away from axle, until a drag is felt as wheel is turned
3. Back off adjusting screw until wheel turns freely without drag
4. Hold adjusting screw stationary and tighten lock nut
5. Repeat steps 1, 2, 3 and 4 on other adjusting screw
6. Repeat steps 1, 2, 3, 4 and 5 on other rear wheel

Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake first, then wheel cylinders

KEY TO INTERVALS

★ Every 6,000 miles
[6] Every 6 months or 6,000 miles
[12] Every 12,000 miles
[24] Every 24,000 miles
[30] Every 30,000 miles
[OC] Every crankcase oil change
[C] Conditional service
Drain and refill differential only for below 0° requirements
Replace dry type air cleaner element when cleaning is not sufficient to maintain efficiency, but not to exceed 24,000 miles or 2 years
Lubricate manifold heat control valve if shaft is not free
Drain and refill automatic transmission only when used under severe service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

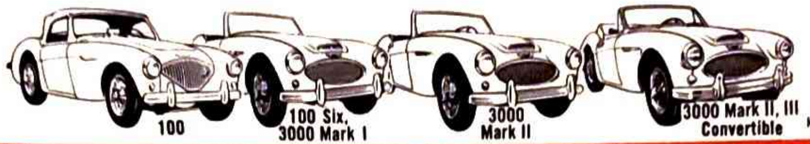
KEY TO LUBRICANTS

AF	Automatic Tr[illegible]ion Fluid, Type A, Suffix [illegible]
CC	Carburetor Cl[illegible]
CL	Chassis Lubri[illegible] Studebaker S[illegible] No. MS-939 If conventional [illegible]assis lubricant is used, reduce interval to 1,000 miles
GL	Straight Mineral Gear Lubricant
GL4*	Multipurpose-Type Gear Lubricant API Service GL4
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant
MH	Mixture of kerosine and soda
MO	Motor Oil
UJ	Universal Joint Grease
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease Studebaker Spec. No. MS-939

* For Twin-Traction differential, use Studebaker Twin-Traction Lubricant

AUSTIN HEALEY

1952-65 100, 100 Six,
3000 Series Mark I, II, III



HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
4-cylinder	18LF (2) (6-volt)	57
6-cylinder: 2-seater	18LF (2) (6-volt)	57
4-seater	29H	57

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
4-cyl. engine	125
100 Six engine	145-155
100 Six, 6 port head	150-160
3000 engine	155-165

SPARK PLUGS

Champion UN-12Y; high-speed driving, N-3
Gap: .025"
Torque: 25 ft. lb.

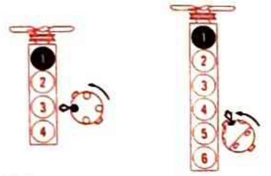
IGNITION POINTS

Lucas
Gap: .014"-.016"
Dwell angle: 4-cyl. 57°-63° (60° preferred)
6-cyl. 33°-37° (35° preferred)

CONDENSER

Lucas
Capacity: .18-.25 mfd

Cylinder Numbering Sequence

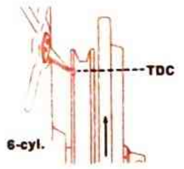


Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Connect 12-volt test lamp to distributor primary terminal and to ground
2. Centralize the distributor vernier scale
3. On 6-cylinder engines align notch in pulley with pointer. This represents 0° BTDC. On 4-cylinder engines it will be necessary to determine 0° TDC of No. 1 piston by the use of a dial indicator or other suitable means
4. Turn distributor housing until points just open, as indicated by test lamp
5. Turn vernier knob to advance timing to recommended setting. Each mark on vernier equals two degrees on crankshaft
6. Road test car and make final adjustments to obtain maximum engine performance without ping

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4-cyl., 100 Six, 6°; 3000 Mark I, 5°; 3000 Mark II, III, 12°

FUEL PUMP

S.U. electric: 4-cyl. and 100 Six (4 port head BN 4) type HP; 100 Six (6 port head BN 6) and 3000, type LCS
Volume: 31 ounces per minute

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
S.U.	
4-cyl.; 100 Six (4 port) Twin 1-bbl. H-4	1
100 Six (6 port); 3000 Mark I Twin 1-bbl. HD-6	2¼
3000 Mark II Twin or Triple 1-bbl. HS-4	2
Mark II, III convertible Twin 1-bbl. HS-6	2

ENGINE IDLE SPEED

4-cyl. 650-700 rpm; 6-cyl. 450-650 rpm

VALVE CLEARANCES

(engine hot, not running)
Intake .012"; exhaust .012"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
100	12½	...
100 Six, 3000 series	12	11½

Cooling system pressure: 6-cyl., 7 pounds; 4-cyl., 4 pounds

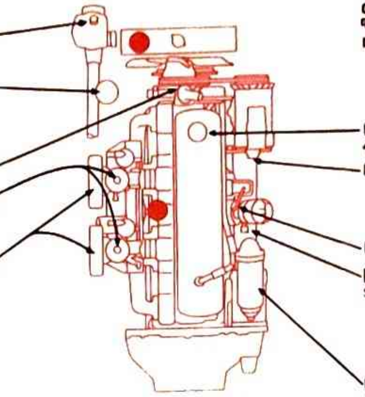
★ **Steering Gear** (plug) .... **MP**
Above +10°, 90; below +10°, 80
4-cyl., remove wheel to service

★ **Brake and Clutch Reservoir** (cap) .... **HB**
Fill to ½ inch from top of reservoir
4-cyl. and early 6-cyl., reservoir rear of carburetors.
Some 6-cyl., reservoir adjacent to rear carburetor.
4-cyl., do not have hydraulically-operated clutch

12 **Water Pump** (plug) .... Sparingly 140 **MP**

★ **Carburetor Dashpots** .... **MO**
Unscrew caps, maintain level at ½ inch below top of inner hollow shaft
3 dashpots on some 3000 Series Mark II

Air Cleaner Elements .... Service
3 Wire gauze .... Wash and oil **MO**
3 filters on some 3000 series Mark II



6-cyl. Engine Illustrated

CRANKCASE .... "MS" MO

	"MS"	MO
Above +32°	30	20W-30
Above +10°	20,20W	20W-30
Below +10°	10W	...

CAPACITY 100, 7¼ quarts; all other models, 7 quarts

DRAIN and REFILL
See Service Instructions, page 4

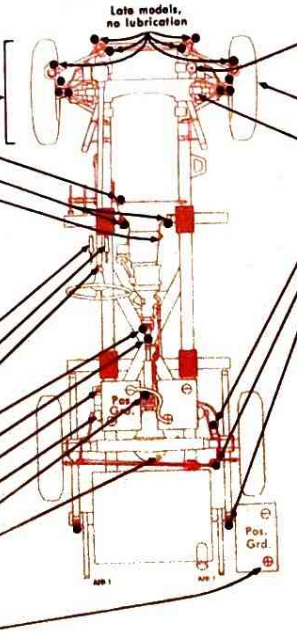
Oil Fill Cap
4-cyl., rear of valve cover

Generator
Oil hole .... Sparingly **MO** 12
Lubricator cap .... **WB** 6
Remove spring, felt pad and fill cap ½ full

Crankcase Dipstick .... Check level

Distributor Shaft (grease cup) .... **WB** 6
Screw cup 1 turn; early 6-cyl. only
Cam bearing (under rotor) .... Sparingly **MO** 6
Advance mechanism .... **MO** 6
Apply sparingly thru hole around cam

Oil Filter .... Replace 6
4-cyl., forward, at center
Add extra 1½ pints oil



★ **Front Suspension and Steering Linkage** ...... (6 or 12 fittings) **CL**

★ **Brake and Clutch Pedal Pivots** 4-cyl. .... **CL**
12 **Clutch Operating Shaft** 4-cyl. ..... Sparingly **CL**

TRANSMISSION .... 30 MO

Reach dipstick and fill plug thru floor
★ Maintain level to mark on dipstick
CAPACITY Mark II convertible, 6⅞ pints; with overdrive, 8⅝ pints
All others, 6 pints; with overdrive, 7½ pints except 1953-54 100 series with aluminum housing, 6⅝ pints
6 **DRAIN and REFILL**
Overdrive, drain thru separate plug hole. Fill thru transmission

12 **Speedometer Cable** .... Coat **CL**
12 **Tachometer Cable** .... Coat **CL**
★ **Steering Column** (oil hole) .... Sparingly **MO**
Adjustable steering column, no lubrication
★ **Universal Joint** .... **CL**
★ **Universal Joint Spline** .... **CL**
6 **Fuel Pump Screen** .... Clean
6 **Shock Absorbers** .... Refill **SA**
★ **Universal Joint** .... **CL**

DIFFERENTIAL .... MP

Above +10°, 90; below +10°, 80
★ Maintain level to fill plug hole
CAPACITY 3⅝ pints, except 100 1953-55 spiral bevel, 2¾ pints
6 **DRAIN and REFILL**

★ **Battery** .... Test and fill
2-seaters, 2 6-volt batteries under lid behind seat

GAS TANK .... Gallons

	Gallons
100	14½
100 Six, 3000 series	14⅝

TIRES .... Pressure

	Front	Rear
5.90-15 Mark II convertible	20	25
Sustained high speeds over 110mph	25	30
5.90-15 All others	20	23*
Sustained high speeds over 90 mph	26	29

* Full load, 26

3 Rotate tires, Method H, then balance wheels

Steering Idler (plug) (under hood) .... **MP** ★
Above +10°, 90; below +10°, 80
4-cyl., remove wheel to service

Front Wheel Bearings .... Repack **WB** 6

Shock Absorbers .... Refill **SA** 6

Hand Brake Cable .... **CL** ★
Hand Brake Balance Lever .... **CL** ★
Spring Shackles .... **CL** ★

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
Two hex head adjusters are provided on each front backing plate. A single square headed adjuster is provided on each rear backing plate
Adjust the brakes as follows:
4-cyl., 100 Six
Front brakes
1. Turn each adjuster until a slight drag is felt when revolving drum
2. Back off each adjuster until drum just turns freely without drag

Rear brakes
3. Turn adjuster until a slight drag is felt when revolving drum
4. Back off adjuster 2 clicks. Drum must turn freely without drag

3000
Self-adjusting disc brakes are used on front. Rear brakes are drum type and are adjusted as shown above
Bleeding sequence: RR, LR, RF, LF

▬	Position for lift adapter
•	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★ Every 1,000 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant	**MO**	Motor Oil
HB	Hydraulic Brake Fluid, Heavy-Duty	**MP**	Multi-Purpose Gear Lubricant
SA	Shock Absorber Fluid, Light		
WB	Wheel Bearing Grease		

AUSTIN HEALEY
1958-65 Sprite Mark I, II, III
M.G. MIDGET
1961-65 Mark I, II

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include modified stage turned engines)

BATTERY

	AABM Group No.	Amp. Hrs.
All	Special	43

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	140-160

SPARK PLUGS

Champion: Normal, N-5; high-speed or competition driving, N-3
Gap: .024"-.026"
Torque: 30 ft. lb.

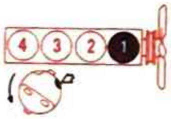
IGNITION POINTS

Lucas
Gap: .014"-.016"
Dwell angle: 57°-63° (60° preferred)

CONDENSER

Lucas
Capacity: .18-.25 mfd

Cylinder Numbering Sequence

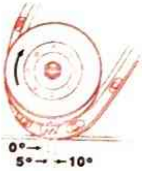


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Position distributor vernier at center of scale
2. Connect 12-volt test lamp to distributor primary terminal and to ground
3. Turn crankshaft pulley until notch is aligned with recommended degree pointer on timing gear cover
4. Loosen distributor clamp bolt and turn distributor housing until breaker points just open, as indicated by test lamp
5. Tighten distributor clamp bolt
6. Make final precise adjustment with vernier knob and test lamp

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Premium fuel, 96 octane minimum, is recommended. Spark knock must not be tolerated
Mark I, 5°; Mark II and Midget (with 948cc eng.) 4°; (with 1100cc eng.) 5°

FUEL PUMP

Sprite Mark III, Midget Mark II: S.U. type AU-F; others: AC type Y
Pressure: S.U. 2½-3½ lb.; AC 1½-2½ lb. at idle rpm
Volume: S.U. 18 ounces per minute; AC approx. 13 ounces per minute at idle rpm

CARBURETOR ADJUSTMENT

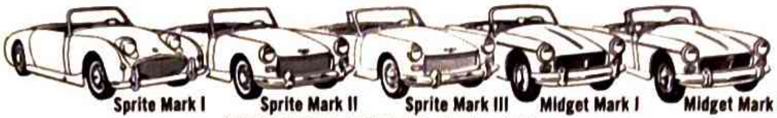
S.U.	Idle Mixture (initial turns)
Twin 1-bbl. H-1	1
Twin 1-bbl. HS-2	2

ENGINE IDLE SPEED

650-750 rpm

VALVE CLEARANCES

(engine cold, not running)
Intake .013"; exhaust .013"



HOOD RELEASE: Sprite Mark I, front; others, inside

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
All models	6½	6

Cooling system pressure, 7 pounds

6 **Water Pump** (plug) .... Sparingly 140 **MP**

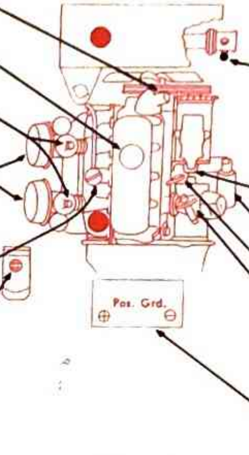
Oil Fill Cap ....

★ **Carburetor Dashpots** .... 20 **MO**
Unscrew caps, maintain level at ½ inch below top of inner hollow shaft

Air Cleaner Elements .... Service
12 Dry type .... Replace
3 Wire gauze .... Wash and oil **MO**

12 **PCV System Valve** .... Wash
Also clean filter in fill cap and hose

★ **Brake and Clutch Reservoir** (cap) .... **HB**
Fill to ½ inch below top of fill hole



CRANKCASE

		"MS" MO
Above +32°	30	20W-30
Above +10°	20,20W	20W-30
Below +10°	10W	...

CAPACITY (including oil filter) 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Steering Gear .... **MP** 12
Above +10°, 90; below +10°, 80
Use low pressure. Check rubber boots for leaks
Do not disturb hex plugs on steering rack tube
Models with 1100cc engine, no fitting. If leaks are observed, loosen right side boot and inject not more than ⅓ pint lubricant

Generator
Lubricator cap .... **WB** 12
Oil hole .... **MO** 12

Oil Filter (under car) .... Replace 6

Crankcase Dipstick .... Check level

Distributor
Cam bearing (under rotor) .... Sparingly **MO** 6
Advance mechanism .... **MO** 6
Lubricate sparingly thru hole around cam

Battery .... Test and fill ★

★ **Front Suspension and Steering Linkage** .... (8 fittings) **CL**

TRANSMISSION

.... 30 **MO**
Reach fill and level plug thru opening at left side under floor mat
★ Maintain level to fill plug hole
CAPACITY 2¾ pints
6 **DRAIN and REFILL**

12 **Tachometer Cable** .... Coat **CL**

12 **Speedometer Cable** .... Coat **CL**

★ **Universal Joints** .... **CL**
To reach front joint fitting, lift floor mat and remove rubber plug on left side of tunnel

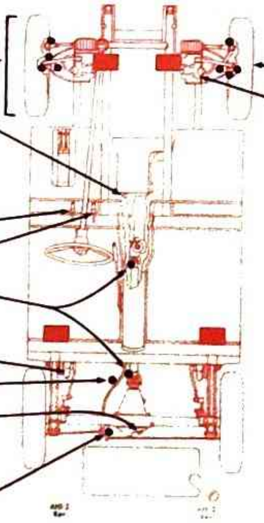
6 **Rear Shock Absorbers** .... Fill **SA**

★ **Hand Brake Cable** .... **CL**

DIFFERENTIAL

.... **MP**
Above +10°, 90; below +10°, 80
★ Maintain level to fill plug hole
CAPACITY 1¾ pints
6 **DRAIN and REFILL**

★ **Hand Brake Balance Lever** .... **CL**



Front Wheel Bearings .... **WB** 6
Remove dust cap and fill. Do not remove hub

Front Shock Absorbers .... Fill **SA** 6

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
Front brakes have two adjusters. Rear brakes have a single adjuster which operates both shoes
Adjust the brakes as follows:

1. Raise car, remove hub caps, remove plugs from adjustment holes in brake drums
2. Turn wheel until hole lines up with slotted head adjuster
3. Turn adjuster until drum is locked
4. Back off adjuster until drum just turns freely without drag
5. Repeat steps 2, 3 and 4 for second adjuster
6. Repeat procedure at each wheel

Models with 1100cc engine
Self-adjusting disc brakes are used on front. Rear brakes are drum type and are adjusted by following above procedure

Bleeding sequence: RR, LR, RF, LF

GAS TANK

	Gallons
All models	7¼

TIRES

Pressure	Front	Rear
5.20-13	18	20

3 Rotate tires, Method A or G, then balance wheels

🟥	Position for lift adapter
•	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★ Every 1,000 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
SA	Shock Absorber Fluid, Light
WB	Wheel Bearing Grease

FIAT

1957-61 1100, 1100 DeLuxe, 1200 Sedan; 1958-63 1200 Spider; 1962-65 1100D, 1100 Export, 1100 Special; 1964-65 1500 Spider

1200 Spider

1500 Spider

HOOD RELEASE: Inside

1100,
1100 Export

1200,
1100 Special

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1957-61 Model 1100	22NL	38
Model 1200	Special	40
1962-65	24	53

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
Series 1100, 1200	110	150
1500	115	150

SPARK PLUGS

Champion: 1500, N-9Y; Others, L-7
Gap: 1500, .020"-.024"; Others, .024"
Torque: 1500, 18-20 ft. lb.; Others, 15 ft. lb.

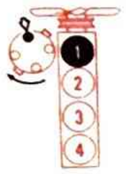
IGNITION POINTS

Marelli
Gap: .016"-.019" (.017" preferred)

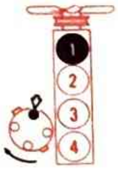
CONDENSER

Marelli
Capacity: 1500, .20-.25 mfd; Others, .15-.20 mfd

Cylinder Numbering Sequence



1500



Others

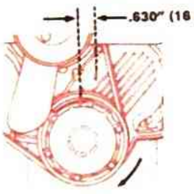
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

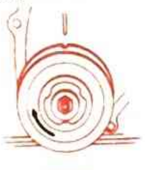
1. Connect 12-volt test lamp to distributor primary terminal and to ground
2. Turn pulley until notch is aligned with marker. This represents 0° BTDC*
3. Turn distributor housing until points just open as indicated by test lamp

* 1500, set mark on pulley .630" (12°) before raised mark on engine cover

Timing Mark and Setting



1500



Others

Timing Setting (Before Top Dead Center):
1500, 12°; Others, 0° BTDC
(Select suitable setting based on fuel used)

FUEL PUMP

Weber mechanical
Pressure: Approx. 3-4 lb. at idle rpm
Volume: Not required. Check pressure only

CARBURETOR ADJUSTMENT

WEBER		Idle Mixture (initial turns)
1-bbl.	32 IM	1½-2½
2-bbl.	36 DIM 7	1-2
2-bbl.	36 DCD	1-2
2-bbl.	28-36 DCD19	2½

Note: For proper fuel enrichment device operation, the carburetor climatic control should be in position "E" for summer and position "I" for winter. Align letter with index mark on carburetor cover or air cleaner

ENGINE IDLE SPEED

800-850 rpm

VALVE CLEARANCES

(engine cold, not running)
1500: Intake .008"; exhaust .008"
Others: Intake .004"; exhaust .004"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts With Heater
1500	8.3
Others	5.3

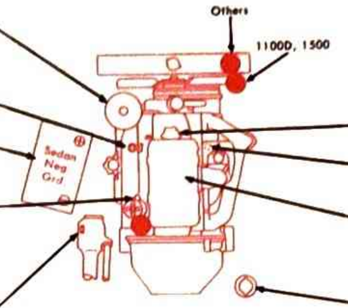
Oil Filter .... Replace, add extra pint oil
1500, at left center
6 1100D, 1500 — 3 Others

Crankcase Dipstick .... Check level

★ **Battery** .... Test and fill

Distributor Shaft
All except 1500 (grease cup) .... LM
6 1100D — 3 Others
6 1500 (oil cup) .... MO
Located at left front

★ **Steering Gear (plug)** .... 90 EP
1100 Special, all 1200 and 1500 models, plug on right side of housing



CRANKCASE .... "MS" MO

"MM" may be used under favorable conditions

Above +90°	40	20W-40
Above +32°	30	10W-30
Above +10°	20	10W-30
Below +10°	10W	10W-30

CAPACITY 1500, 3¾ quarts; others, 3⅛ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap

Generator .... MO 12
Some models, no lubrication

Air Cleaner Element .... Service
Dry type .... Clean 3
Dry type .... Replace 6

Brake Fluid Reservoir (cap) .... HB 3
1200 Spider, left side
Fill to level mark on reservoir

★ **Steering Gear Shaft (under hood)** .... LM

★ **Front Suspension and Steering Linkage** ...... (5 or 11 fittings) CL

★ **Clutch Pedal** CL
Not on 1500

TRANSMISSION .... 90 GL, EP

Maintain level to fill plug hole
6 1100D, 1500 — 3 Others
CAPACITY 2⅜ pints
DRAIN and REFILL
18 1100D, 1500 — 12 Others

★ **Universal Joint Spline** .... LM
1100 series only

3 **Universal Joint** .... LM
1200 series only

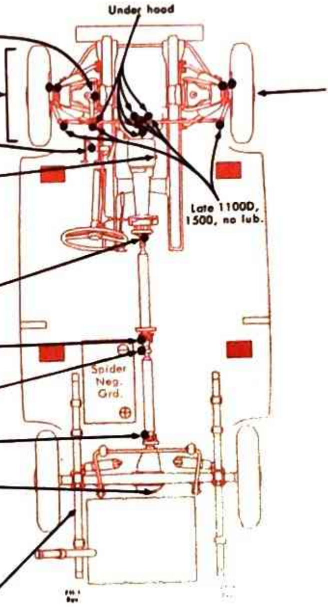
3 **Universal Joint Spline** .... LM
1200 series only

★ **Universal Joint** .... LM

DIFFERENTIAL .... 90 EP

Maintain level to fill plug hole
6 1100D, 1500 — 3 Others
CAPACITY 1500, 1.9 pints; others, 1¼ pints
DRAIN and REFILL
18 1100D, 1500 — 12 Others

6 **Rear Springs** .... GG
Apply between leaves



Front Wheel Bearings .... Repack LM
1100D, 1962-63 1200 Spider, 1500 12
Others 6

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Adjust the brakes as follows:

1957-59

Two adjusting nuts are provided at the top portion of each backing plate

1. Turn each adjuster until drum cannot be turned by hand
2. Back off each adjuster until drum just turns freely without drag
3. Repeat procedure at each wheel

1960-65: 1100, 1200 series

1. Depress pedal and hold "ON" firmly
2. Turn each adjuster until cams contact shoes
3. Back off each adjuster 20°
4. Release pedal and check to see that drum can rotate freely without drag

1964-65: Model 1500 rear drums

1. Proceed as shown above but back off adjusters until .004"-.006" drum to shoe clearance is obtained
2. Measure clearance with feeler gage inserted into slot in drum

1964-65: Model 1500 disc brakes
Brakes are self-adjusting. No adjustment normally required. Replace pads when worn to .120" thickness

Bleeding sequence: RR, LR, RF, LF

GAS TANK

	Gallons
All models	10

TIRES

Pressure	Front	Rear
5.20-14, 1100 series	21½	24
1200 series	24	27
5.60-14, station wagon	19	27
145-14, model 1500	23	24

6 **Rotate tires, Method J, then balance wheels**

🟥	Position for lift adapter
●	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★ Every 1,500 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
18 Every 18,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant
GG	Graphite Grease
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
LM	Lithium Grease
MO	Motor Oil

FORD ENGLISH
1960-65 Anglia
1962-64 Consul 315
1962-65 Consul Capri
1963-65 Cortina

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Anglia	29NF*	51
Consuls, Cortina	29NF*	51

* Special lug-type terminals

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
1963-65 Cortina, Anglia 1200	175
Angila 997, all others	160

SPARK PLUGS

Autolite AG3; Champion N-5
Gap: .023"-.028"
Torque: 25 ft. lb.

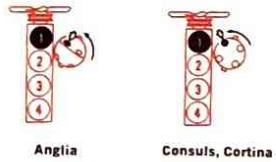
IGNITION POINTS

FoMoCo (England)
Gap: .014"-.016"
Dwell angle: 57°-63°

CONDENSER

FoMoCo (England)
Capacity: .18-.22 mfd

Cylinder Numbering Sequence

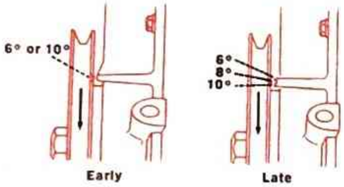


Firing Order: 1, 2, 4, 3

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Set distributor octane scale to 0°
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain alignment of notch in pulley with mark on timing gear cover. This setting equals specified timing advance
7. Reset to proper idle speed
8. Additional performance may be obtained by altering timing setting to obtain maximum acceleration from 30 to 50 mph, in 4th gear, using full throttle

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Anglia, G.T. models, 10°; Cortina 1500, 8°; Anglia 1200 and all others, 6°
(Align notch with pointer)

FUEL PUMP

AC mechanical

Pressure: 1¼-2 lb. while accelerating engine briefly

Volume: Approx. 1 pint in 1 minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
SOLEX	
1-bbl.	1½
WEBER	
2-bbl.	2
ZENITH	
1-bbl.	½-1½

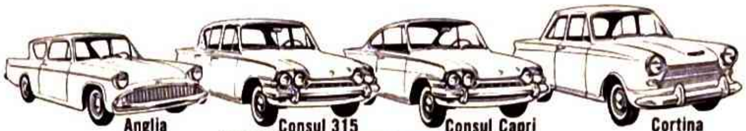
ENGINE IDLE SPEED

500-550 rpm

VALVE CLEARANCES

(engine normal operating temperature)

G.T. models: intake .014"; exhaust .021". All others: intake .010"; exhaust .017"



HOOD RELEASE: Cortina, outside; all others, inside

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
Anglia	6¾	6⅜
Consul 315	7	6½
Consul Capri	7	6½
Cortina 1200	6¼	5¼
Cortina 1500	7¾	6⅞

Cooling system pressure, 7 pounds

Crankcase Dipstick .... Check level

5 Oil Fill Cap .... Wash and oil MO

5 Generator (oil hole) .... MO

Air Cleaner Element .... Service
- **15** Dry type .... Replace
- **5** Oil bath .... Wash and fill MO

★ **Brake Fluid Reservoir** (cap) .... HB
Fill to level mark on reservoir

★ **Clutch Fluid Reservoir** (cap) .... HB
Fill to level mark on reservoir

★ **Steering Gear** (rubber plug) .... 90 EP

Front Suspension Units (plugs) .... AF
Check level with car unloaded on ground
Remove plugs; located forward on left unit
Fill to bottom of plug hole
5 Anglia **15** Consul and Cortina

★ **Front Suspension and Steering Linkage**
Early Anglia, Consuls .... (9 fittings) LM
Early Cortina. (3 sealed bearings, 6 ftgs.) LM
Late Anglia, Cortina .... (9 sealed bearings)
Inspect and replace pivot assembly if damaged

TRANSMISSION .... 80 EP

★ Maintain level to fill plug hole
CAPACITY 2⅛ pints
DRAIN and REFILL
5 1960-62 Anglia **15** 1962 Consuls
1963-65 Not recommended

★ **Universal Joints** .... LM
Some 1964 Anglia and Cortina and all 1965, no lubrication

5 **Rear Springs** .... Coat PO

DIFFERENTIAL .... HP

Above -10°, 90; below -10°, 80
★ Maintain level to fill plug hole
CAPACITY 2⅜ pints
DRAIN and REFILL
5 1960-62 Anglia **15** 1962 Consuls
1963-65 Not recommended

Rear Shock Absorbers .... Fill SA
5 Anglia **15** Consuls
Cortina, no service

GAS TANK .... Gallons

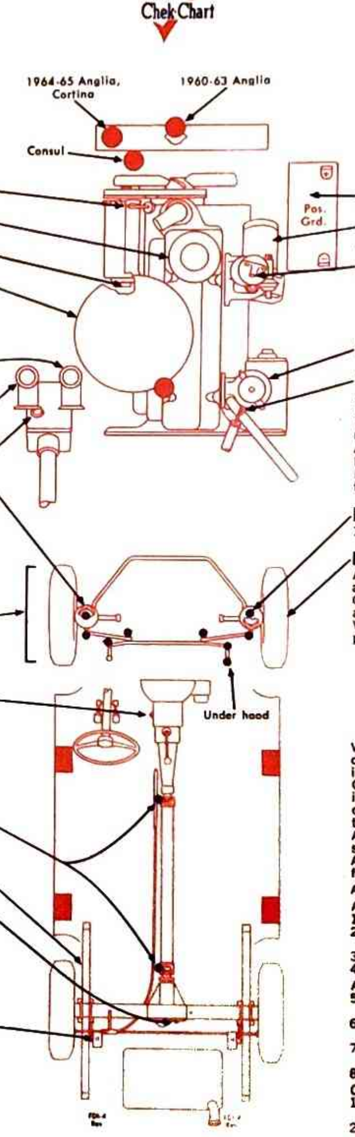
Anglia	8⅜
Consuls	10¾
Cortina	9½

TIRES

Pressure	Front	Rear
5.20-13, Anglia	22	22
5.60-13, Anglia station wagon	24	30
5.20-13, Cortina 1200	24	24
5.60-13, Cortina G. T.	24	24
5.60-13, 5.90-13, 6.00-13, all others	22	24

Pressures may be increased according to load and speed requirements

5 Rotate tires, Method A, then balance wheels



🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	20,20W
Above -10°	10W
Below -10°	5W

CAPACITY 2¾ quarts except Cortina 1500, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter .... Replace **5**
Add extra ⅜ quart oil

Distributor
Cam bearing (under rotor) .... Sparingly MO ★
Advance mechanism .... MO ★
Lubricate sparingly thru opening around cam

Fuel Pump Sediment Bowl and Screen .... Clean **5**

TRANSMISSION, Automatic .. AF

Cortina models only
Check level, immediately after stopping engine, PARK position .... ★

CAPACITY, quarts	Initial Refill	Total Refill
All	5¼	6¾

DRAIN and REFILL Not recommended
Remove 1 converter plug, converter pressure take-off plug and transmission plug

Front Suspension Thrust Bearings .. Repack LM **5**
1960-62 only. Pry off plastic cap to repack

Front Wheel Bearings .... Repack LM
Anglia, Cortina, initial torque, 30 ft. lb.; final adjustment, loosen nut 2-2½ castellations
Consuls, initial torque, 14-17 ft. lb.; slacken adjusting nut 2½-3 castellations
Wheel must turn freely with only slight end play permitted
Anglia **5**
Consul and Cortina **15**

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Consuls, all G.T. and late Cortina, use self-adjusting disc brakes on front. No adjustments required. Replace pads when worn to ¹⁄₁₆-⅛-inch thickness

All Consul and Cortina rear brakes have a single square head adjuster on each backing plate

Anglia uses two square head adjusters on each front and rear backing plate

Adjust the brakes as follows:

Anglia and early Cortina front brakes
1. Turn adjuster until shoe just contacts drum
2. Back off adjuster until shoe just clears drum and no drag is felt when turning drum
3. Repeat steps 1 and 2 at other adjuster
4. Repeat steps 1, 2 and 3 at other front wheel

Anglia rear brakes
5. Turn forward adjuster until drum cannot be turned by hand
6. Turn rearward adjuster until light contact is made with shoe
7. Back off forward adjuster, about 2 clicks, until drum just turns freely without drag
8. Repeat steps 5, 6 and 7 at other rear wheel

Consul and Cortina rear brakes
1. Turn the adjuster until drum cannot be turned by hand
2. Back off adjuster until drum just turns freely, without drag
3. Repeat procedure for other rear brake

Bleeding sequence: LF, RF, LR, RR, LF

KEY TO INTERVALS

★ Every 1,000 miles
Cortina: Every 5,000 miles
5 Every 5,000 miles or twice yearly
15 Every 15,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
EP Mild Extreme Pressure Gear Lubricant
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP Hypoid Gear Lubricant
Specifications No. M2C28-B, 90; M2C28-A, 80
LM Lithium Grease
Cortina: Specification No. ESA-M-1C47-A or ESA-M-1C75-A; if not available lubricate every 1,000 miles
MO Motor Oil
PO Penetrating Oil
SA Shock Absorber Fluid, Light

Minx Series III-A, -B, -C (1600)
Super Minx Mark I, II, III
Minx Series V, Husky Series III

HOOD RELEASE: Minx series III, III-A, -B, Super Minx, inside; all others, front

HILLMAN

1957-62 Minx Series I, II, III, III-A, -B, -C (1600)
1957-65 Husky Series I, II, III
1962-65 Super Minx Mark I, II, III; Minx Series V

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
1957-58 early	Special	43
1958 late, 1959-65	29H	58

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
Minx Series I, II; Husky I, II	150-155
Minx Series III, III-A, -B, -C, V; Super Minx; Husky Series III	170-180

SPARK PLUGS

Champion: Super Minx, Minx Series III-A, -B, -C, V and late Husky Series II, III, N-5; others, N-8
Gap: Series III-A, -B, -C, V, Super Minx and late Husky Series II, III, .025"; others, .028"-.032"
Torque: 25 ft. lb.

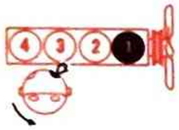
IGNITION POINTS

Lucas
Gap: Super Minx, Minx Series III-C, V, Husky Series III, .015"; others, .016"
Dwell angle: 57°-63°

CONDENSER

Lucas
Capacity: .2 mfd

Cylinder Numbering Sequence

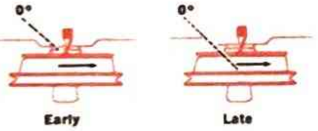


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Connect tachometer
2. Connect timing light to No. 1 spark plug or distributor cap tower
3. Set distributor vernier at "Full Retard" position, except Minx Series III-C, V, Husky Series III, Super Minx, one notch before "Full Retard"
4. Bring engine to operating temperature
5. Set idle speed to 400-500 rpm, transmission in NEUTRAL
6. Observe timing mark at pulley and turn distributor housing to obtain alignment of mark with pointer (this represents 0° BTDC)
7. Turn vernier knob 2-2⅖ turns to advance timing to 6°-8° BTDC (pulley marker should appear .216"-.295" before pointer). Minx Series III-C, V, Husky Series III, turn vernier knob 1-1½ turns to advance timing to 6°-8° BTDC (pulley marker should appear .197"-.275" before pointer); Super Minx, 2 turns, 8°-11° BTDC (.275"-.355")
8. Reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Super Minx, Husky Series III and Minx Series V, 9°-11°; others, 6°-8°

FUEL PUMP

AC type: YD (on Husky); UG (on Minx)
Pressure: 1½-2½ lb. at cranking speed
Volume: Approx. 1 pint in 1 minute idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
SOLEX 1-bbl.	1-2
ZENITH 1-bbl.	1-2

ENGINE IDLE SPEED

Manual Trans. and Easidrive 600-650 rpm
Borg Warner Auto. Trans. 650 rpm in NEUTRAL

VALVE CLEARANCES

(engine at 180°F., not running)
Intake .012"; exhaust .014"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek Chart

COOLING SYSTEM ... Quarts

	With Heater	Without Heater
Husky Series III, Minx Series V, Super Minx	7½	..
All other models	7⅝	7⅝

Cooling system pressure: 1957-58, 7 pounds; 1959-63, 4 pounds; except Super Minx, Mark I, 7 pounds. 1964-65, 9 pounds

6 **Generator** (oil hole) ... MO

★ **Battery** ... Test and fill
Super Minx, right side

Air Cleaner Element ... Service
- **3** Oil bath ... Wash and fill MO
- **3** Dry type ... Clean
- **12** Dry type ... Replace
- **C** Wire gauze ... Wash and oil

3 **Steering Gear** (rubber plug or fittings) ... EP
Above +10°, 140; below +10°, 90
Early models, 2 fittings; late models, rubber plug
With fittings, to lubricate, turn wheels fully to right

★ **Clutch Master Cylinder** (plug) ... HB
Fill to ½ inch below top of fill hole

★ **Brake Master Cylinder** (plug) ... HB
Fill to ½ inch below top of fill hole

6 **PCV System Valve** ... Clean CC

★ **Front Suspension and Steering Linkage** ... (0*, 1*, 15, 19 or 21 fittings) CL
* Super Minx Mark I, 1 fitting on idler arm; Super Minx Mark II, III, Minx Series V and Husky Series III, no fittings

TRANSMISSION, Manual ... MO

Above -10°, 30; below -10°, 20,20W
★ Maintain level to fill plug hole or to mark on dipstick
Models with floor shift reach thru floor at right of tunnel
CAPACITY 3⅜ pints
6 DRAIN and REFILL

★ **Universal Joints** ... 140 EP
Super Minx Mark I, front joint only. Minx Series V, Super Minx Mark II, III and Husky Series III, no lubrication

★ **Hand Brake Cable** ... CL
Minx Series V, Super Minx Mark II, III and Husky Series III, no lubrication

DIFFERENTIAL ... EP

Hypoid: Above -10°, 90; below -10°, 80
Spiral Bevel: Above +32°, 140; above -10°, 90; below -10°, 80
★ Maintain level to fill plug hole
CAPACITY 2 pints
6 DRAIN and REFILL

GAS TANK ... Gallons

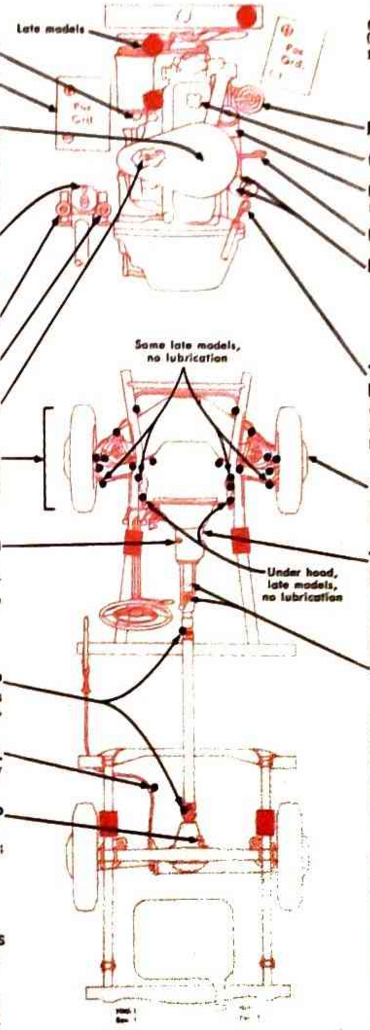
	Gallons
Super Minx Mark I	13¼
Minx Series V, Super Minx Mark II Estate car	12
Super Minx Mark II, III sedan, convertible	12½
Other Minx series	8⅝
Husky series	7½

TIRES ... Pressure

Pressure	Front	Rear
5.90-13, 6.00-13	25*	25*
6.50-13, Super Minx Estate car	25*	25*
Full load	25*	30
5.00-15, 5.60-15, 5.90-15	24◆	24◆
Full load	24◆	26◆
5.90-15, Minx Estate car	24◆	26◆
Full load	24◆	28◆

* High-speed driving, 28
◆ Sustained high-speed driving, add 6 pounds

3 Rotate tires, Method C, then balance wheels


Late models
For Grill
For Grill
For Grill
Some late models, no lubrication
Under hood, late models, no lubrication

■ Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +70°	30*	20W-40*
Above +20°	20,20W	10W-30
Above +5°	10W	10W-30
Below +5°		5W-20

* High-speed driving, particularly in hot weather, 40 or 20W-40
CAPACITY Husky series I, 3¾ quarts; all others (including oil filter), 4¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Filter Sediment Bowl and Screen ... Clean **6**

Oil Fill Cap

Oil Filter ... Replace **6**
Not on Husky series I

Crankcase Dipstick ... Check level

Distributor
- Cam bearing (under rotor) ... Sparingly MO **3**
- Advance mechanism ... MO **3**

Sparingly thru hole around cam

TRANSMISSION, Automatic ... AF

Borg-Warner
Check level, engine idling, PARK position ... ★
CAPACITY 6½ quarts
DRAIN and REFILL Not recommended

Front Wheel Bearings ... Repack WB **12**
Initial torque, 15-20 ft. lb.; final adjustment, loosen to obtain .003"-.007" end play

TRANSMISSION, Automatic MO

Easidrive
Above 0°, 10W-30; below 0°, 5W-20
Fill to mark on dipstick ... ★
CAPACITY 3¼ pints
DRAIN and REFILL ... **6**
Floor Shift Mechanism ... MO **6**

BRAKE ADJUSTMENT

With brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
Front brakes have two adjusters. Rear brakes are provided with a single adjuster which operates both shoes
Adjust the brakes as follows:
Minx Series, Husky Series, Super Minx Mark I

1. With car raised and hub caps removed, turn wheel until adjustment opening in wheel and drum lines up with slotted head adjuster
2. Turn adjuster until the shoe or shoes contact the drum and back off the adjuster one notch
3. Repeat procedure at each wheel
4. Apply brakes firmly a few times and recheck adjustments

Super Minx Mark II, III, Minx Series V: Self-adjusting disc brakes are used on front. Rear brakes are drum type and are adjusted as shown above

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

- ★ **Every 1,000 miles**
  Super Minx, Minx Series V: Every 3,000 miles
- **3** **Every 3,000 miles**
- **6** **Every 6,000 miles**
- **12** **Every 12,000 miles**
- **C** **Conditional service**
  Wash and oil wire gauze air cleaner element as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant
CC	Carburetor Cleaner
EP	Mild Extreme Pressure Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
WB	Wheel Bearing Grease

JAGUAR

1962-65 3.8, 4.2 Liter "E" Type

HOOD RELEASE: Early models, rear of both front fenders; late models, inside right and left

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	Special	60

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
8:1CR	155
9:1CR	180

SPARK PLUGS

Champion: Early 3.8 liter, N-5; late 3.8 liter, UN-12Y; 4.2 liter, N-5; for racing, N-3

Gap: .025"

Torque: 25 ft. lb.

IGNITION POINTS

Lucas

Gap: .014"-.016"

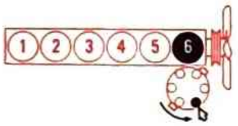
Dwell angle: 33°-37° (35° preferred)

CONDENSER

Lucas

Capacity: .18-.25 mfd

Cylinder Numbering Sequence



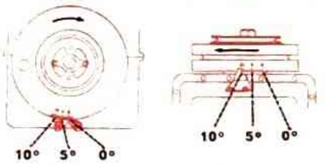
Firing Order: 1, 5, 3, 6, 2, 4

Note: No. 1 cylinder is at rear

TIMING PROCEDURE

1. Centralize distributor micrometer advance mechanism
2. Loosen distributor clamp bolt and connect a 12-volt test lamp to distributor primary terminal and to ground
3. Turn engine until recommended timing mark on pulley is aligned with pointer
4. Turn distributor until points just open as indicated by test lamp. Rotor must be pointing toward No. 1 or 6 distributor cap tower
5. Tighten clamp bolt securely

Timing Mark and Setting



3.8 engine 4.2 engine

Timing Setting (Before Top Dead Center): 8:1CR engine, 9°; 9:1CR engine, 10°

NOTE: 8:1 CR engine requires 94 octane min.; 9:1 CR engine requires 98 octane min. If minimum octane fuel is not available, timing must be retarded accordingly

FUEL PUMP

Lucas electric: type 2 F.P.

Pressure: 1962-63, 2-2½ lb.; 1964-65 (from chassis numbers 880619 and 889510), 3-3½ lb.; all at 13.5 volts

Volume: 60 ounces per minute

CARBURETOR ADJUSTMENT

S.U.	Idle Mixture (initial turns)
Triple 1-bbl. HD-8	2½

ENGINE IDLE SPEED

500 rpm

VALVE CLEARANCES

(engine cold, not running)

Intake .004"; exhaust .006"

For racing: Intake .006"; exhaust .010"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

COOLING SYSTEM	Quarts With Heater
All models	19¼

Cooling system pressure: Early models, 4 pounds; late models, 9 pounds

★ **Carburetor Dashpots** (3 caps) .... 20 MO
Unscrew caps and add as required

M **Battery** .... Test and fill
Ground: 3.8 liter, positive; 4.2 liter, negative

Oil Fill Cap ....

5 **Generator** (oil hole) .... Sparingly MO
Early 3.8 and all 4.2 liter, no lubrication

W **Clutch Fluid Reservoir** (cap) .... HB
Fill to level mark on reservoir

W **Brake Fluid Reservoirs** (2 caps) .... HB
Fill to level marks on reservoirs

Crankcase Dipstick .... Check level

Steering Gear .... LM
2.5 3.8 liter 6 4.2 Liter
Use low pressure, do not swell retainer boots. Check boot clamps for tightness

Front Suspension and Steering Linkage .... (6 fittings) LM
2.5 3.8 liter 6 4.2 Liter

TRANSMISSION .... MO, HP
3.8 liter, 30 MO; 4.2 liter, 90HP
Reach thru opening in left side of transmission cover. Lift carpet and cover to expose opening
★ Maintain level to fill plug hole
CAPACITY 3 pints
DRAIN and REFILL
10 3.8 Liter 12 4.2 Liter

5 **Door Hinges** Both sides .... Sparingly LM
Late 3.8 liter, no fittings, lubricate with MO; 4.2 liter, no lubrication

★ **Universal Joint and Spline** .... LM
Reach thru opening in left side of transmission cover. Lift carpet and cover to expose opening
Late 3.8 and all 4.2 liter, no lubrication

★ **Universal Joint** .... LM
Late 3.8 and all 4.2 liter, no lubrication

★ **Rear Axle Shaft Univ. Joints** Both sides .... LM
Late 3.8 and all 4.2 liter, no lubrication

Rear Wheel Bearings (plug) .... LM
10 3.8 Liter 12 4.2 Liter
Remove wheel to expose plug. Fill opening with lubricant using low pressure. Do not pack hubs

Rear Suspension Pivot Brgs. Both sides .... LM
5 3.8 Liter 6 4.2 Liter

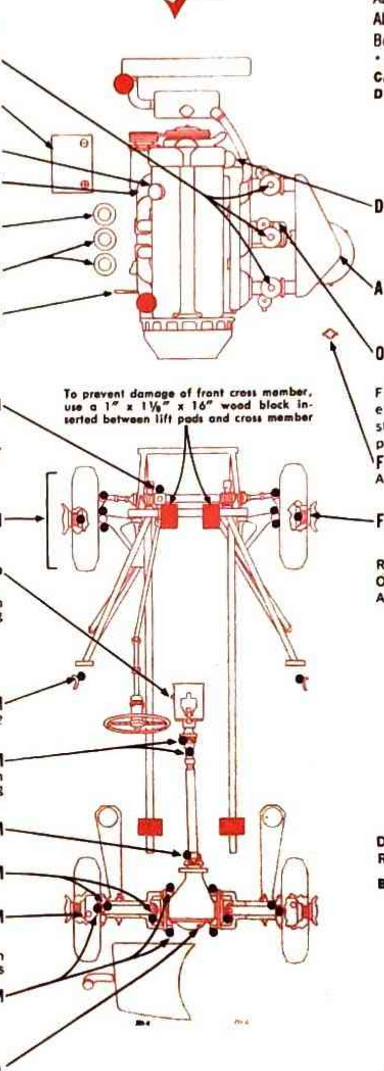
DIFFERENTIAL, Powr-Lok .... 90 HP*
★ Maintain level to fill plug hole
CAPACITY 3¼ pints
DRAIN and REFILL
10 3.8 Liter 12 4.2 Liter

GAS TANK	Gallons
All models	16¾

TIRES .... Pressure	Front	Rear
6.40-15 (normal driving) RS.5 type	23*	25*
Sustained high speeds RS.5 type	30◆	35◆

* Not over 130 mph

◆ For maximum speeds over 130 mph



To prevent damage of front cross member, use a 1" x 1⅛" x 16" wood block inserted between lift pads and cross member

CRANKCASE		"MS" MO
Above +90°	40	20W-40,10W-30*
Above +32°	30	20W-40,10W-30*
Below +32°	20	20W-40,10W-30*

* Do not use 10W-30 in badly worn engines

CAPACITY (including oil filter) 9 quarts

DRAIN and REFILL
See Service Instructions, page 4

Distributor
Cam bearing (under rotor) .... Sparingly MO ★
Advance mechanism and shaft .... MO ★
Sparingly thru hole around shaft

Air Cleaner Element .... Service
Dry type .... Replace
3.8 Liter 10 4.2 Liter 12

Oil Filter .... Replace
3.8 Liter 5 4.2 Liter 6
Filter must be drained thru plug provided, if element is not replaced at crankcase drain. Start-stop city driving, low speeds or worn engine replace at each oil change

Fuel Filter Sediment Bowl and Screen .... Clean
Also clean screens in carburetor float bowl unions
3.8 Liter 5 4.2 Liter 6

Front Wheel Bearings .... Sparingly LM
3.8 Liter 10 4.2 Liter 12
Remove wheel to expose fitting
Observe vent hole while lubricating
Adjust bearings to obtain .003"-.005" end play

BRAKE ADJUSTMENT

Disc brakes on all wheels, no adjustment required. Replace pads when worn to ¼" thickness

Bleeding sequence: LR, RR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

- ★ 3.8 Liter, Every 2,500 miles
  4.2 Liter, Every 3,000 miles
- W Weekly
- M Monthly
- 2.5 Every 2,500 miles
- 5 Every 5,000 miles
- 6 Every 6,000 miles
- 10 Every 10,000 miles
- 12 Every 12,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3

HP* Hypoid Gear Lubricant

LM Lithium Grease No. 2

MO Motor Oil

* Special lubricant suitable for Powr-Lok differential must be used

190c, -Dc

220b, -Sb, -SEb

HOOD RELEASE: Inside

230SL

MERCEDES-BENZ
1960-65 Models 190c, -Dc; 220b, -Sb, -SEb; 230SL

TUNE-UP DATA

See Service Instructions for Procedure

(Diesel engine tune-up data not included)

BATTERY

	AABM Group No.	Amp. Hrs.
220SEb	Special	60
230SL	Special	55
Others	Special	52

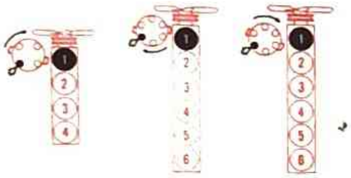
COMPRESSION PRESSURE
(psi at cranking speed, throttle open)
190c 128-142; 220 series (8.7:1CR) 130-150, (7.6:1CR) 115-135; 230SL 140-160

SPARK PLUGS
Refer to car owner's manual

IGNITION POINTS
Bosch
Gap: 190c .016"-.020"; 220 Ser., 230SL .012".016"
Dwell: 190c 48°-52°; 220 Ser., 230SL 34°-38°

CONDENSER
Bosch
Capacity: .25-.30 mfd

Cylinder Numbering Sequence



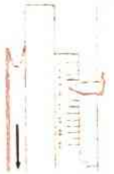
6-cyl. 230SL 6-cyl. Others

Firing Order: 4-cyl. 1, 3, 4, 2; 6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE
1. Disconnect all spark plug wires, connect timing light to No. 1 spark plug wire and connect tachometer
2. Crank engine with starter and adjust timing to initial setting
3. Reconnect plug wires and run engine at 4000-4500 rpm to check maximum advance setting

Note: Correct high-speed advance setting is more vital than low-speed setting

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Values to left of slash (/) are initial settings at cranking rpm. Values to right of slash are to be observed at 4000-4500 rpm with vacuum connected. 190c, 2°/48°-52°; 220b, 3°/43°-47°; 220Sb, 4°/44°-48°; 220SEb, 4°/40°; 230SL, 4°/44° at 3000 rpm
230SL Dist. Nos. ZV2/51C17, JFUR6 4°-7° @ 1500, 30° @ 3000; VJUR6BR49 4°/30° @ 3000; no vacuum

FUEL PUMP
Solex except 220SEb, 230SL Bosch electric
Pressure: Solex models, 2.1-2.8 lb. at idle rpm; Bosch models, 10 lb. (electric)
Volume: Solex, 1-1¼ pints ex. 220b, -Sb, 230SL, 2½-2⅝ pints in 1 minute at idle rpm; Bosch, 1 gallon in 1 minute

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
SOLEX			
All	1½-2	—	—
ZENITH			
Twin 2-bbl.	1½-2	• index	index

BOSCH
Fuel injection system. Only trained personnel should perform adjustments

ENGINE IDLE SPEED
Manual Trans.: 230SL 800-850 rpm; others 750-800 rpm
Auto. Trans.: 230SL 700-800 rpm; others 680-720 rpm; in NEUTRAL or DRIVE

VALVE CLEARANCES
(engine cold, not running)
230SL: Intake .003"; exhaust .007"
Others: Intake .003"; exhaust .006"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	With Heater
190c, -Dc	10⅝
220 series	12
230SL	11⅜

Cooling system pressure, 14 pounds

★ **Power Steering Reservoir**..............AF
Maintain level ½ inch below top of reservoir
11.4 DRAIN and REFILL
30.4 **Power Steering Reservoir Filter**......Replace
11.4 **Distributor Shaft** (oil cup)..............MO
11.4 Wick under rotor..................MO
11.4 **Fine Fuel Filter**..................Service
190Dc...............Wash and blow dry
220SEb, 230SL.....Replace paper element
190Dc, located forward
Fuel Prefilter (in line)...............Service
11.4 190Dc..............Clean wire strainer
11.4 220b, -Sb...............Clean cup only
32 220b, -Sb.............Replace element
3.8 **Fuel Injection Pump**....................MO
Maintain level to plug hole or mark on dipstick
★ **Battery**......................Test and fill
Oil Filter ....Service
Add ½ quart oil
3.8 190Dc (fabric and paper elements)..Service
Wash fabric disc element in gasoline, blow dry with low air pressure. Replace paper element
7.6 Others ....Replace
★ **Clutch Fluid Reservoir** (cap)..............HB
Maintain reservoir ¾ full
★ **Brake Fluid Reservoir** (cap)..............HB
Maintain reservoir ¾ full
230SL, located on brake booster
11.4 **Manual Steering Gear** (plug)..........90 HP
63 **Booster Brake Air Cleaner Element**....Replace
On models with power brakes
190, 220 series, located left of radiator

★ **Front Suspension and Steering Linkage**..........(15 fittings) CL

TRANSMISSION, Manual.....AF
3.8 Maintain level to fill plug hole
CAPACITY 3 pints
11.4 DRAIN and REFILL

★ **Propeller Shaft Flange**..................CL
★ **Propeller Shaft Bearing**..................CL
★ **Universal Joint Spline**..................CL

DIFFERENTIAL.............90 HP
3.8 Maintain level to fill plug hole
CAPACITY 5¼ pints
11.4 DRAIN and REFILL 14 mm hex wrench required

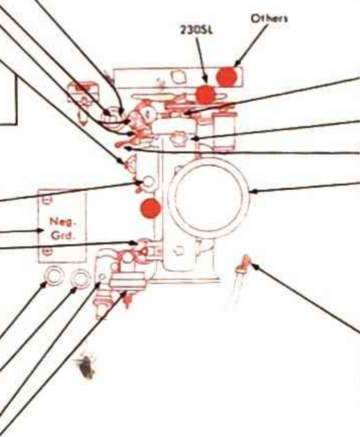
FUEL TANK..............Gallons

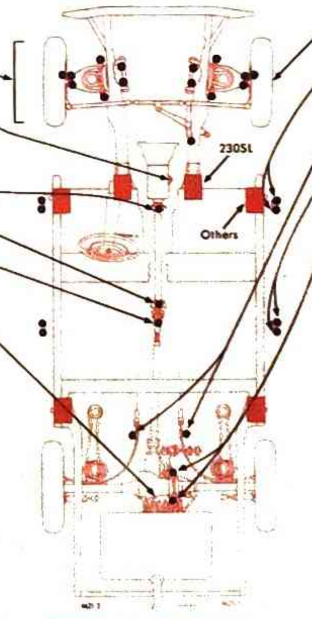
190c, -Dc	13⅝
Late 220b, -Sb, -SEb; 230SL	17
Early 220b	13½
Early 220Sb	16¾
Early 220SEb	16¼

TIRES

Pressure	Front	Rear
6.70-13, 220b, -Sb, -SEb	22	25
Full load or high-speed driving	22	30
7.00-13	21½	27
Full load	22	30
7.25-13	22	25
Full load	24	30
185-14	25½	31

3.8 Rotate tires, Method B or C, then balance wheels





▬ Position for lift adapter
• Lubrication fitting
● Cooling system drain

CRANKCASE ....MO
Gasoline eng. "MS-DG", Diesel eng. "DG-DM"

Above +90°	30	...
Above +32°	20,20W	10W-20,10W-30
Above −10°	10W	10W-20,10W-30
Below −10°	5W	5W-20

CAPACITY 190c, -Dc, 4¼ quarts; others, 5¾ quarts
DRAIN and REFILL
See Service Instructions, page 4

Water Pump (plug)..................90 HP 11.4
Maintain level to side plug opening
Oil Fill Cap
Crankcase Dipstick..............Check level
Air Cleaner Element................Service
Dry type ....Clean 3.8
Dry type ....Replace
230SL 32
Others 11.4
Every 11,400 to 32,000 miles
Oil bath............Crankcase grade MO 3.8
Wash and fill

TRANSMISSION, Automatic..AF
Check level, engine idling, PARK position....... ★

CAPACITY, quarts	Initial Refill	Total Refill
All except 190Dc	3	5*

* Approximately 4 quarts will fill unit
DRAIN and REFILL........................11.4
Remove 1 converter plug and transmission plug
Reinstall plugs using new seals

Front Wheel Bearings................BR 11.4
Fill dust cap and replace. Do not remove wheel hub
Door Hinges Both sides................CL 11.4
Not on 230SL
Special Mercedes lube gun required
Hand Brake Cables....................CL ★
On early sedan models only
Door Hinges Both sides................CL 11.4
Not on 230SL
Special Mercedes lube gun required
Swing Axle Pivot....................CL ★

BRAKE ADJUSTMENT

Two adjustment cams are provided on each plate
Adjust the brakes as follows:
Models 190c, -Dc; 220b; midproduction 220Sb, -SEb
1. Turn each adjuster cam until a considerable resistance is felt when drum is revolved
2. Back off each adjuster until drag is just eliminated and drum turns freely

Late 220Sb, -SEb; 230SL
Disc brakes on front, no adjustment required. Rear brakes, adjust as shown above
Some early 220SEb Coupe, self-adjusting rear brakes, late models, adjust as shown above
First production 220Sb, -SEb use self-adjusting drum brakes

Bleeding sequence: 230SL, **RR, LR, RF, LF;** others, power brake upper screw, lower screw, **RR, LR, RF, LF;** Power brake upper screw, lower screw, master cylinder (if equipped with bleed screw)

KEY TO INTERVALS

★	Every 1,900 miles
3.8	Every 3,800 miles
7.6	Every 7,600 miles
11.4	Every 11,400 miles
30.4	Every 30,400 miles
32	Every 32,000 miles
63	Every 63,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A
BR	Ball and Roller Bearing Lubricant
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
HP	Hypoid Gear Lubricant
MO	Motor Oil

M.G.

1956-62 Series MGA
1963-65 Series MGB

1500, 1600 Series MGA

1600 Mark II Series MGA

HOOD RELEASE: Inside

Series MGB

TUNE-UP DATA

See Service Instructions for Procedure

(Following data does not include "Twin Cam" model or modified, stage tuned engines)

BATTERY

	AABM Group No.	Amp. Hrs.
All	17HF(2) (6-volt)	58

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
1500 engine	140-160
1600 Mark I engine	140-160
1600 Mark II engine	150-170
MGB engine	150-170

SPARK PLUGS

Champion: Normal driving, N-5*; high-speed or competition driving, N-3
Gap: .025"
Torque: 25 ft. lb.
* MGB, N-9Y preferred

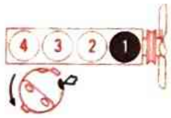
IGNITION POINTS

Lucas
Gap: .014"-.016"
Dwell angle: 57°-63° (60° preferred)

CONDENSER

Lucas
Capacity: .18-.25 mfd

Cylinder Numbering Sequence

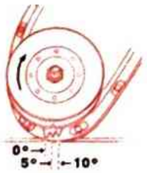


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Position distributor vernier at center of scale
2. Connect 12-volt test lamp to distributor primary terminal and to ground
3. Turn crankshaft pulley until notch is aligned with recommended degree pointer on timing gear cover
4. Loosen distributor clamp bolt and turn distributor housing until breaker points just open, as indicated by test lamp
5. Tighten distributor clamp bolt
6. Make final precise adjustment with vernier knob and test lamp

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1500 engine, 7°
1600 Mark I engine, 6°
1600 Mark II engine, before engine No. 4003, 10°; after engine No. 4004, 5°
MGB engine, 10°

FUEL PUMP

S.U. electric: type HP
Volume: 18 ounces per minute

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
S.U. Twin 1-bbl.	1

ENGINE IDLE SPEED

550-600 rpm

VALVE CLEARANCES

(engine hot, not running)
Intake .015"; exhaust .015"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
MGB	6	5¾
Twin Cam	8	7½
All other models	6½	6

Cooling system pressure, 4 pounds; after Serial No. 71831, 7 pounds. All Twin Cam, 7 pounds

12 **Steering Gear** .... MP
Above +10°, 90; below +10°, 80
Twin Cam models, reach under car. Lubricate sparingly, use low pressure, do not swell rubber boots MGB, no fitting on rack gear. If leaks are observed, loosen right side boot and inject not more than ½ pint lubricant

12 **Water Pump** (plug) .... Sparingly 140 MP
Twin Cam (fitting) ...... Sparingly 140 MP

12 **PCV System Valve** .... Wash
Also clean filter in fill cap and hose

★ **Carburetor Dashpots** .... 20,20W MO
Unscrew caps, maintain level at ½ inch below top of inner hollow shaft
Twin Cam models, right side

Air Cleaner Elements .... Service
Twin Cam models, right side
3 Wire gauze .... Wash and oil 20 MO
3 Dry type, MGB .... Clean
12 Dry type, MGB .... Replace

★ **Clutch and Brake Master Cylinder** (plug) .... HB
Fill to ¼ inch below top of fill hole
MGB and Twin Cam models, separate reservoirs

★ **Front Suspension and Steering Linkage** .... (4 or 6 fittings) CL

TRANSMISSION .... 30 MO

★ Maintain level to mark on dipstick
Combination fill plug and dipstick reach thru tunnel cover
CAPACITY Series MGA, 5⅜ pints; Series MGB, 5⅝ pints; with overdrive 6 pints
6 DRAIN and REFILL
Overdrive, drain thru separate plug hole. Fill thru transmission. Remove rectangular plate on right side to clean filter screen, when draining. Before draining, operate switch 10 to 12 times with ignition ON and 4th gear engaged

12 **Speedometer Cable** .... Coat CL
★ **Universal Joint Spline** CL
1500, no lubrication
★ **Universal Joints** CL
★ **Batteries** .... Test and fill
★ **Hand Brake Cable** CL

12 **Rear Shock Absorbers** ...... Remove and fill SA
MGB, reach thru rubber plug in floor

DIFFERENTIAL .... MP

Above +10°, 90; below +10°, 80
★ Maintain level to fill plug hole
CAPACITY 2¾ pints
6 DRAIN and REFILL

GAS TANK .... Gallons

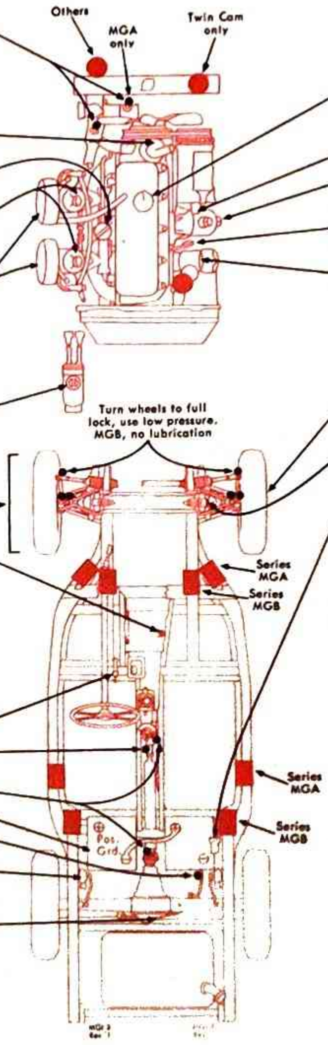
	Gallons
All models	12

TIRES

Pressure	Front	Rear
5.60-14, 5.60-15	17	20
Fast driving	21	24
Sustained high speeds	23	26
5.90-14, 5.90-15	18	20
Fast driving	22	24
Sustained high speeds	24	26

3 Rotate tires, Method B, then balance wheels

Chek Chart



🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	30	20W-30
Above +10°	20,20W	20W-30
Below +10°	10W	...

CAPACITY Twin Cam, 7½ quarts; 1500, 1600, 1600 Mark II, MGB, 4 quarts

DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap
Twin Cam models, forward on left cam cover

Generator (oil hole) .... Sparingly MO **6**
Oil Filter (under car) .... Replace **6**
Add extra pint oil
Crankcase Dipstick .... Check level
Twin Cam models, left side rear
Distributor
Twin Cam models, left side forward
Cam bearing (under rotor) .... Sparingly MO **6**
Advance mechanism .... MO **6**
Sparingly thru hole around cam

Front Wheel Bearings .... Repack WB **6**
Special hub puller required
Front Shock Absorbers .... Fill SA **6**

Fuel Pump Screen .... Clean **6**

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

MGA front or rear drum brakes:

Front brakes have two adjusters. Rear brakes have a single adjuster which operates both shoes

Adjust the brakes as follows:

1. Raise car, remove hub caps, remove plugs from adjustment holes in brake drums (With wire wheels, remove wheels)
2. Turn wheel until hole lines up with slotted head aduster
3. Turn adjuster until drum is locked
4. Back off adjuster until drum just turns freely without drag
5. Repeat steps 2, 3 and 4 for second adjuster
6. Repeat procedure at each wheel

MGB rear drum brakes:
A single square head adjuster is provided on the inboard side of each rear backing plate

1. Turn adjuster clockwise until drum is locked
2. Back off adjuster until drum turns freely without drag

MGA, MGB front or rear disc brakes:

Disc brakes are self-adjusting. No adjustment normally required

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ MGA: Every 1,000 miles
MGB: Every 3,000 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant	MO	Motor Oil	SA	Shock Absorber Fluid, Light
HB	Hydraulic Brake Fluid, Heavy-Duty	MP	Multi-Purpose Gear Lubricant	WB	Wheel Bearing Grease

M.G.

1963-65 Sports Sedan

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	Special	43

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All .... minimum 125

SPARK PLUGS

Champion N-5
Gap: .025"
Torque: 30 ft. lb.

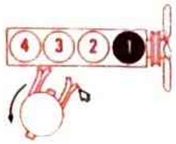
IGNITION POINTS

Lucas
Gap: .014"-.016"
Dwell angle: 57°-63° (60° preferred)

CONDENSER

Lucas
Capacity: .18-.22 mfd

Cylinder Numbering Sequence

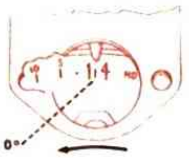


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Position distributor vernier at center of scale
2. Connect 12-volt test lamp to distributor primary terminal and to ground
3. Turn flywheel until recommended mark on flywheel aligns with pointer on flywheel housing
4. Loosen distributor clamp bolt and turn distributor housing until breaker points just open, as indicated by test lamp
5. Tighten distributor clamp bolt
6. Make final precise adjustment with vernier knob and test lamp

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 4

FUEL PUMP

S.U. electric, type SP
Pressure: 2½-3 lb.
Volume: 27 ounces per minute

CARBURETOR ADJUSTMENT

S.U.	Idle Mixture (initial turns)
Twin 1-bbl. HS-2	2

ENGINE IDLE SPEED

615 rpm

VALVE CLEARANCES

(engine cold, not running)
Intake .012", exhaust .012"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	4	3½

Cooling system pressure, 13 pounds
Pressure cap located on expansion tank. Non-pressure cap located on radiator

[6] **Oil Filter** (under car)................Replace
Replace every 6,000 miles or if oil pressure light glows when engine is running, disconnect wire at filter assembly. If light goes out, replace element within 300 miles

[6] **Generator** (oil hole).....Sparingly 20,20W **MO**

[12] **Water Pump** (plug)............Sparingly **LM**

[★] **Carburetor Dashpots** (2 caps).....20,20W **MO**
Unscrew cap, maintain level ½ inch below top of inner hollow shaft

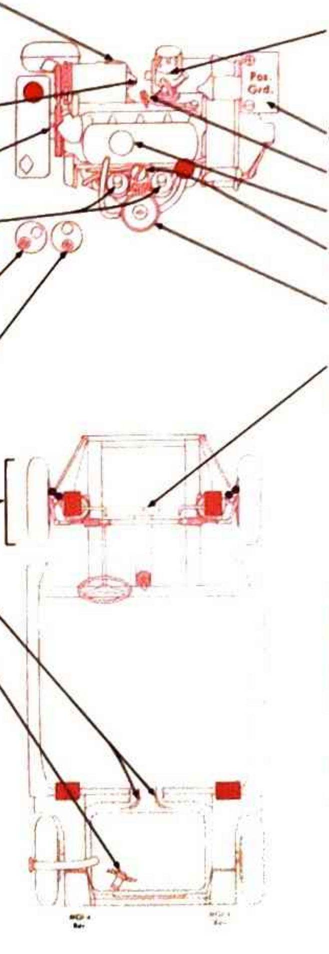
[★] **Clutch Master Cylinder** (plug)............**HB**
Fill to ¼ inch below bottom of fill hole

[★] **Brake Master Cylinder** (plug).............**HB**
Fill to ¼ inch below bottom of fill hole

[★] **Front Suspension**............(4 fittings) **LM**
Wheels should be hanging free when lubricating

[★] **Hand Brake Cable Guides**...........Coat **LM**

[6] **Fuel Pump Screen**...................Clean



CRANKCASE, TRANSAXLE

	"MS"	MO
Above +32°........	30	20W-30
Above +10°........	20,20W	20W-30
Below +10°........	10W	..

CAPACITY (including oil filter) 5⅛ quarts

DRAIN and REFILL
See Service Instructions, page 4

Distributor
Cam bearing (under rotor)....Sparingly **MO** [6]
Advance mechanism................**MO** [6]
Lubricate sparingly thru hole around cam

Battery......................Test and fill [★]

Crankcase Dipstick..............Check level

Oil Fill Cap Crankcase, Transaxle

PCV System Valve...................Wash [12]
Also clean filter in fill cap and hose

Air Cleaner Element................Service
Dry type ....Replace [12]

Gearshift Control Shaft.........Sparingly **LM** [C]
Located in center, top of transaxle. Reach under hood

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Self-adjusting disc brakes are used on front

Rear brakes are drum type and one square headed adjuster is provided on each rear backing plate

Adjust the rear brakes as follows:

1. Turn each adjuster until wheel cannot be turned by hand
2. Back off each adjuster until wheel just turns freely without drag
3. Repeat procedure at each rear wheel

Bleeding sequence: RR, LR, RF, LF

GAS TANK .... Gallons

All models 10¼

TIRES	Pressure Front	Rear
5.50-12	28	24

[★] Rotate tires, Method A, then balance wheels

🟥 Position for lift adapter
• Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

[★] Every 3,000 miles
[6] Every 6,000 miles
[12] Every 12,000 miles
[C] Conditional service
Lubricate gearshift control shaft only if shifting is stiff or at time of major engine overhaul

FOR YOUR SAFETY, WE CHECK YOUR BATTERY BRAKE FLUID FAN BELT LIGHTS MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3

LM Lithium Grease

MO Motor Oil

OPEL

1958-63 Olympia Rekord and Caravan

1958-60

1961-63

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	19L (6-volt)	77

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All ....approximately 145

SPARK PLUGS

AC 45F
Gap: .036"-.040"
Torque: 29 ft. lb.

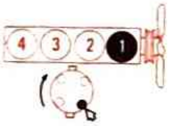
IGNITION POINTS

Bosch
Gap: .016"-.020"
Dwell angle: 47°-53°

CONDENSER

Bosch
Capacity: .24-.32 mfd

Cylinder Numbering Sequence

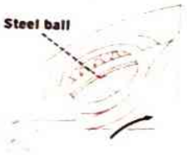


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Loosen distributor clamp bolt, disconnect vacuum line and tape manifold opening
2. Connect timing light to No. 1 spark plug or distributor cap tower
3. Back off carburetor idle speed screw until throttle is closed and engine cannot start
4. Switch on ignition and crank engine with starter
5. Observe timing at flywheel opening and turn distributor to obtain alignment of pointer with steel ball
6. Tighten distributor clamp bolt securely and reconnect vacuum line
7. Set idle speed to 500-550 rpm

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
0° (Steel ball on flywheel aligned with pointer)

FUEL PUMP

AC model 816011
Pressure: 2.13-2.84 lb. at 1950 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
OPEL 1-bbl.	½-1

ENGINE IDLE SPEED

500-550 rpm

VALVE CLEARANCES

(engine hot)
Intake .008", exhaust .010"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM.........Quarts

	With Heater	Without Heater
1.5 liter engine....	8⅛	8
1.7 liter engine....	8	7½

Cooling system pressure, some Rekord models, 4 pounds; all other models, 7.8 to 9.2 pounds

★ **Generator** (oil hole)....................**MO**

Air Cleaner ....Service

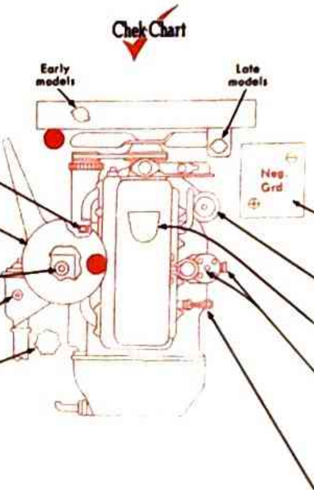
6 Oil bath...............Wash and fill **MO**

6 **Carburetor Filter Screen and Sump**......Clean

★ **Steering Gear** (plug)..................90 **EP**

★ **Brake Master Cylinder**..................**HB**

Fill to ¼ inch below top of fill hole; 1961-63, between "MAX." and "MIN." levels



CRANKCASE......"ML" or "MM" MO

Above 0° 20
Below 0° 10W
CAPACITY 3 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery......................Test and fill ★
1958-60, located at rear

Fuel Pump Sediment Bowl and Screen....Clean 6

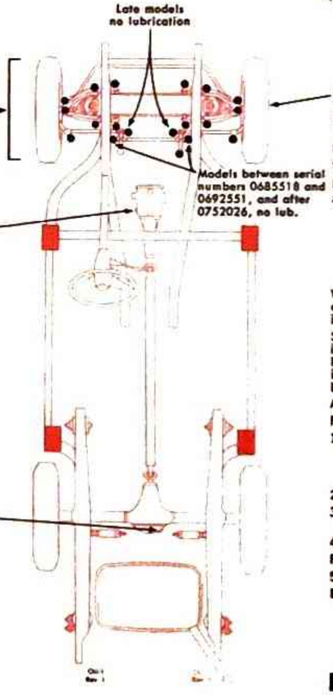
Oil Fill Cap................Wash and oil **MO** 6

Distributor Shaft (grease cup)............**WB** ★
Turn cup ½ turn
After 1.5 Liter engine serial No. 521847 and all 1.7 Liter engines, no lubrication

Wick under rotor...........Sparingly **MO** 6

Crankcase Dipstick.............Check level

★ **Front Suspension and Steering Linkage**.....(15 or 19 fittings) **CL**


Late models no lubrication
Models between serial numbers 0685518 and 0692551, and after 0752026, no lub.

Front Wheel Bearings............Repack **WB** 10
1961-63, repacking not recommended
Initial torque, 25 ft. lb. with brake drum turning. Back off nut until "in" and "out" clearance is felt; then tighten until no longer felt. Lock in this position, if possible, but tighten nut no more than a maximum of 1/12 turn to do so

TRANSMISSION ....80 EP

★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL
30 1958-60
1961-63 Not recommended

DIFFERENTIAL ....90 HP

★ Maintain level to fill plug hole
CAPACITY 2 pints
12 **DRAIN and REFILL**

GAS TANK ....Gallons

All models 10½

TIRES...........Pressure	Front	Rear
5.60-13, 5.90-13 (partial load)......	20	21
Full load	20	24
6.40-13 (partial load).............	20	23
Full load	20	36

4 Rotate tires, Method A, then balance wheels

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Some models have two covered adjustment openings in each front backing plate; other models have one opening. All models have a single opening in each rear backing plate. A screw driver may be used to turn the adjustment eccentric

Adjust the brakes as follows:

Front brakes

1. Adjust upper shoe through upper opening by turning eccentric clockwise until a slight drag is felt when revolving drum in direction of forward rotation
2. Back off eccentric until drag is just eliminated
3. Repeat steps 1 and 2 for lower shoe using lower opening, if so equipped
4. Repeat steps 1, 2 and 3 for other front wheel

Rear brakes

5. Repeat steps 1 and 2 for each rear wheel

Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ **Every 2,000 miles**
4 **Every 4,000 miles**
6 **Every 6,000 miles**
10 **Every 10,000 miles**
12 **Every 12,000 miles**
30 **Every 30,000 miles**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant
EP Mild Extreme Pressure Gear Lubricant
HB Hydraulic Brake Fluid, Heavy-Duty
HP Hypoid Gear Lubricant
MO Motor Oil
WB Wheel Bearing Grease

OPEL

1963-65 Kadett

HOOD RELEASE: Front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	17L (6-volt)	66

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All .... minimum 140*

* Maximum recommended variation between cylinders, 15 psi

SPARK PLUGS

AC 45F
Gap: .025"-.035"
Torque: 30 ft. lb.

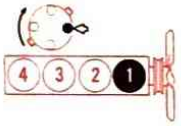
IGNITION POINTS

Bosch
Gap: .015
Dwell Angle: 50°-55°

CONDENSER

Bosch
Capacity: .23-.32 mfd

Cylinder Numbering Sequence

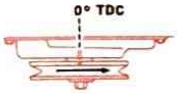


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Loosen distributor clamp bolt, disconnect vacuum line at distributor and tape opening
2. Connect timing light to No. 1 spark plug or distributor cap tower
3. Run engine at 600 rpm
4. Observe timing at pulley and turn distributor to obtain alignment of pointer with notch in pulley
5. Tighten distributor clamp bolt securely and reconnect vacuum line
6. Set idle speed to 600 rpm

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
0° (Notch in pulley aligned with pointer)

FUEL PUMP

AC model 816013
Pressure: 2.1-2.8 lb. at 1950 rpm
Volume: Approx. 1 pint in 45 seconds at idle rpm

CARBURETOR ADJUSTMENT

OPEL	Idle Mixture (initial turns)
1-bbl.	¾

ENGINE IDLE SPEED

600 rpm

VALVE CLEARANCES

(engine hot)

intake .008"; exhaust .008"

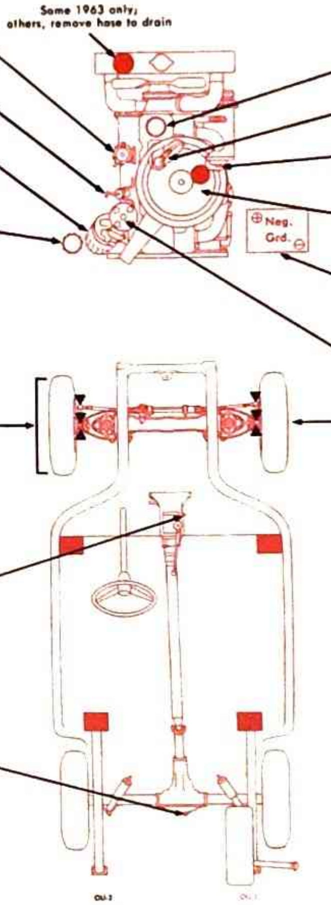
SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	5½	5

Cooling system pressure, 8½ pounds

Chek-Chart



★ **Fuel Pump Sediment Bowl and Screen** ... Clean

Crankcase Dipstick .... Check level

★ **Oil Filter** (under car) .... Replace
Add extra ½ pint oil

3 **Brake Master Cylinder** .... HB
Maintain level to MAX. mark

★ **Front Suspension and Steering Linkage** .... (6 sealed bearings)
Inspect periodically for damaged seals. Replace assembly if seal is damaged

TRANSMISSION .... 90 MP
40 or 50 MO may be used
3 Maintain level to fill plug hole
CAPACITY 1¼ pints
DRAIN and REFILL Not recommended

DIFFERENTIAL .... 90 MP
3 Maintain level to fill plug hole. Check level with car on level ground
CAPACITY 1 pint
DRAIN and REFILL Initially at 1,000 miles; thereafter not recommended

GAS TANK .... Gallons
All models 8¾

TIRES .... Pressure		Front	Rear
6.00-12	Sedan	20	23*
	Coupe	17	21*
	Wagon	19	26*

* Full load: Sedan, 26; coupe, 24; wagon, 32

★ Rotate tires, Method A, then balance wheels

🟥 Position for lift adapter
▲ Prepacked bearing
● Cooling system drain

CRANKCASE	"MS"	MO
Above +32°	20,20W	10W-30
Above 0°	10W	5W-20
Below 0°	5W	5W-20

CAPACITY 2⅝ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap

PCV System Valve .... Clean or replace ★

Generator .... MO 24
Remove plastic plug in end

Air Cleaner .... Service
Oil bath .... Wash and fill 50 MO ★

Battery .... Check and fill
Check level periodically while vehicle is being refueled

Distributor
Wick under rotor .... Sparingly MO ★

Front Wheel Bearings .... Repack WB C
Initial torque 25 ft. lb. with hub turning. Back off nut until end play is felt. Tighten nut until end play is just eliminated. Lock adustment nut in this position or, if necessary, tighten no more than 1/12 turn to do so

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" the need for service is indicated

Adjust the brakes as follows:

Two hex-head adjusters are provided on each backing plate

1. While spinning wheel in direction of forward rotation, turn forward adjuster in same direction, until drum is locked
2. Back off adjuster until drum is free and drag is just eliminated
3. Turn rear adjuster in same direction as shown above but spin wheel in opposite direction
4. Repeat steps 1, 2, 3 for each wheel

Bleeding sequence: LR, RR, RF, LF or RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 6,000 miles**
3 **Every 3,000 miles**
24 **Every 24,000 miles**
C **Conditional service**
Repack front wheel bearings when wheel or hub is removed for service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Differential only; MIL-L-2105B
WB	Wheel Bearing Grease

PEUGEOT
1958-64 Model 403

HOOD RELEASE: Inside

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	55

COMPRESSION PRESSURE
(at cranking speed with throttle open) psi

All 120-150*

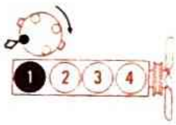
* Maximum variation between cylinders must not exceed 10% of highest cylinder pressure

SPARK PLUGS
AC 45F; Autolite AE6; Champion L-10
Gap: .025"
Torque: 18-20 ft. lb.

IGNITION POINTS
S.E.V. or Ducellier
Gap: .015"
Dwell angle: 48°-52°

CONDENSER
S.E.V. or Ducellier
Capacity: .35 mfd

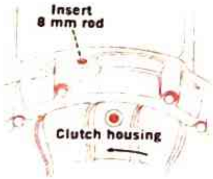
Cylinder Numbering Sequence



Firing Order: 1, 3, 4, 2

TIMING PROCEDURE
1. Insert a rod 8 mm (.314") in diameter into the hole on top of the clutch housing. A suitable rod is in the tool kit
2. Turn the engine by hand until the rod slips into a notch in the flywheel
3. Connect a 12-volt test lamp across the ignition points
4. Loosen the distributor clamp bolt and turn the distributor until the lamp indicates that the points have just opened. Tighten clamp and remove bar

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 9½°

FUEL PUMP
S.E.V. model 46L/SR; AC model YG
Pressure: 1-3 lb. at idle rpm
Volume: ¼ pint per minute (minimum) at 2000 to 4000 rpm

CARBURETOR ADJUSTMENT

SOLEX	Idle Mixture (initial turns)
1-bbl. 32PBICA	1-2

ENGINE IDLE SPEED
620 rpm

VALVE CLEARANCES
(engine cold, must be cooled for at least 6 hours)
intake .004"; exhaust .010"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater
All models	9½

★ **Water Pump** (oiler) .... MO

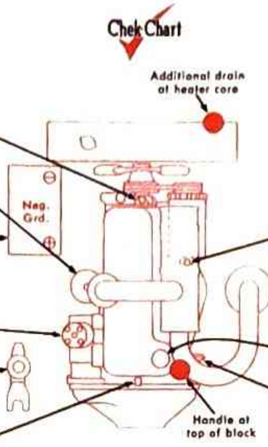
★ **Oil Filter Metallic screen** .... Wash
Assemble with new gasket

★ **Battery** .... Test and fill

★ **Distributor**
Wick under rotor .... Sparingly MO

★ **Brake Master Cylinder** (cap) .... HB
Fill to level (NIVEAU) mark

★ **Clutch Throwout Bearing** (oil cup) . Sparingly MO
Late models only



CRANKCASE

	"MS"	MO
Above +90°	40	20W-40
Above +32°	40,30	20W-40
Above +10°	30,20W	20W-40,10W-30
Below +10°	10W	10W-30

CAPACITY (including oil filter) 4¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Generator (oil cap) .... MO 4

Air Cleaner Element .... Service
Oil bath .... Wash and fill MO ★

Oil Fill Cap

Crankcase Dipstick .... Check level

★ **Front Suspension and Steering Linkage** .... (7 fittings) CL

C **Front Springs** .... MO
If springs squeak, brush on MO

★ **Clutch Pedal** CL

TRANSMISSION .... 30,40 MO
90EP or MP may be used above +60°
★ Maintain level to fill plug hole
CAPACITY 1958-60, 3¼ pints; 1961-64, 3 pints
4 DRAIN and REFILL

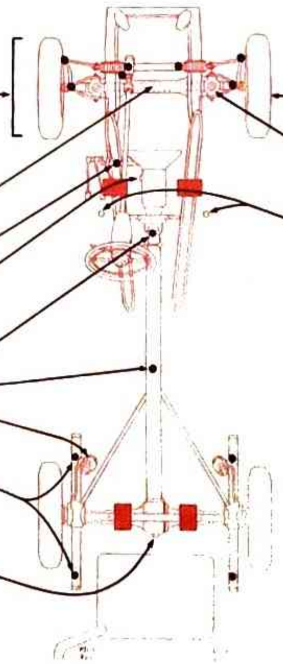
★ **Universal Joint** CL

★ **Propeller Shaft Bearing** CL

10 **Rear Shock Absorbers** .... SA
Fill to 1 inch from top
On all wagons and sedans before Serial No. 2,370,075; others, no service

★ **Rear Springs** CL
On station wagon only

DIFFERENTIAL .... 90 EP,MP
★ Maintain level to fill plug hole
CAPACITY: Sedan, 3 pints; station wagon, 3⅝ pints
4 DRAIN and REFILL



Front Wheel Bearings .... LM 10
½ ounce in dust cap. Do not remove hub

Front Shock Absorbers .... SA 10
Fill to 1 inch from top

Windshield Wiper Shafts . . . Sparingly 10W MO ★

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two square head brake adjusters are provided on each backing plate

Adjust the brakes as follows:

Front brakes
1. Rotate one adjuster in direction of forward wheel rotation until drum locks
2. Back off adjuster just enough for drum to turn freely
3. Repeat procedure at other adjuster
4. Repeat steps 1, 2 and 3 for other front wheel

Rear brakes
5. Proceed as above for forward adjusters; tighten rear adjusters in opposite direction

Bleeding sequence: RR, LR, RF, LF

GAS TANK .... Gallons

All models	13¼

TIRES

Pressure	Front	Rear
Sedan: 6.50-15	19	22
165-380, Michelin X	18	22
Station wagon: 165-380	22	23
185-380, Michelin X	19	26

4 Rotate tires, Method G or H, then balance wheels

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS
★ Every 2,000 miles
4 Every 4,000 miles
10 Every 10,000 miles
C Conditional service
Lubricate front springs if squeaks develop

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
SA	Shock Absorber Fluid, Light

PEUGEOT

1961-65 Model 404

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24	55

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
All	120-150*

* Maximum variation between cylinders must not exceed 10% of highest cylinder pressure

SPARK PLUGS

1961-63: AC 44F; Autolite AE6; Champion: L-8, L-10
1964-65; (Cylinder head marked on left front with "CL") AC C44XL; Autolite AG4; Champion N-5
Gap: .025"
Torque: 18-20 ft. lb.

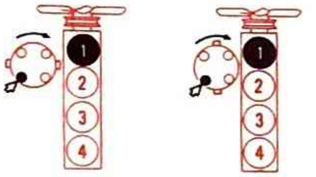
IGNITION POINTS

S.E.V. or Ducellier
Gap: .016"
Dwell angle: 55°-59°

CONDENSER

S.E.V. or Ducellier
Capacity: .35 mfd

Cylinder Numbering Sequence



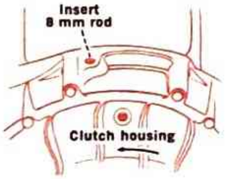
Early Late

Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Insert a rod 8 mm (.314") in diameter into the hole on top of the clutch housing. A suitable rod is in the tool kit
2. Turn the engine by hand until the rod slips into a notch in the flywheel
3. Connect a 12-volt test lamp across the ignition points
4. Loosen the distributor clamp bolt and turn the distributor until the lamp indicates that the points have just opened. Tighten clamp and remove bar

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 11°

FUEL PUMP

S.E.V. model 46L/SR; AC model YK
Pressure: 1-3 lb. at idle rpm
Volume: ¾ pint per minute (minimum) at 2000 to 4000 rpm

CARBURETOR ADJUSTMENT

SOLEX	Idle Mixture (initial turns)
1-bbl. 32PBICA	1-2
1-bbl. 34PBICA	1-2

ENGINE IDLE SPEED

620 rpm

VALVE CLEARANCES

(engine cold, must be cooled for at least 6 hours)
Intake .004"; exhaust .010"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts With Heater
All models 8½
Serial No. 4079240 and prior, nonpressurized system; after Serial No. 4079240, cooling system pressure, 4 pounds

[★] **Battery** .... Test and fill

[★] **Oil Filter Metallic screen** .... Wash
Assemble with new gasket

[4] **Generator** (oil cap) .... Sparingly **MO**

Air Cleaner Element .... Service
[★] Oil bath .... Wash and fill **MO**

[12] **Power Brake Breather** .... Replace
Not on 1961-64 models

Oil Fill Cap ....

[★] **Brake Master Cylinder** (cap) .... **HB**
Fill to level (NIVEAU) mark

[★] **Front Suspension and Steering Linkage** .... (8 fittings) **CL**

[★] **Clutch Pedal** .... **CL**

TRANSMISSION .... 30,40 **MO**
90EP or MP may be used above +60°
[★] Maintain level to fill plug hole
CAPACITY 3 pints
[8] **DRAIN and REFILL**

[★] **Universal Joint** .... **CL**

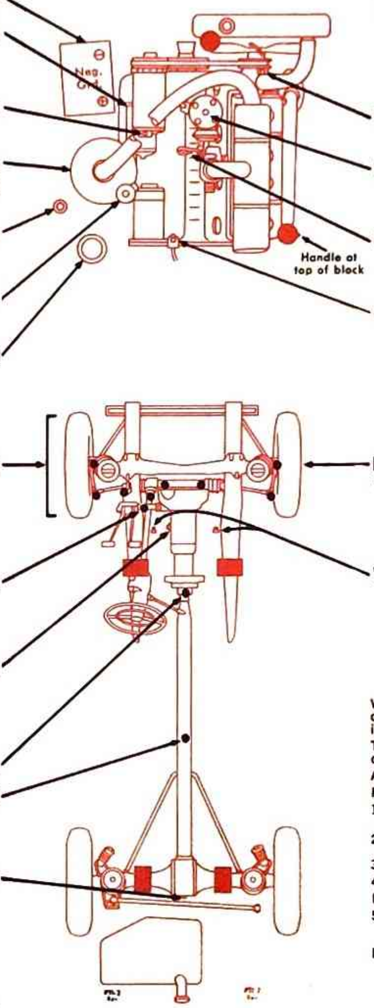
[★] **Propeller Shaft Bearing** .... **CL**

DIFFERENTIAL .... 90 **EP, MP**
[★] Maintain level to fill plug hole
CAPACITY 3½ pints
[8] **DRAIN and REFILL**

GAS TANK .... Gallons
All models 13¼

TIRES .... Pressure	Front	Rear
Sedan: 165-380 or 5.90-15	20	23
Sedan: 6.50-15	20	23
Station wagon: 165-380	20	30

[4] Rotate tires, Method G or H, then balance wheels



CRANKCASE .... "MS" **MO**

		"MS" MO
Above +90°	40	20W-40
Above +32°	40,30	20W-40
Above +10°	30,20W	20W-40, 10W-30
Below +10°	10W	10W-30

CAPACITY (including oil filter) 4¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Water Pump (oiler) .... Sparingly **MO** [★]

Distributor
Wick under rotor .... Sparingly **MO** [★]

Crankcase Dipstick .... Check level

Clutch Throwout Bearing (oil cup) .... Sparingly **MO** [★]

Front Wheel Bearings .... **LM** [10]
½ ounce in dust cap. Do not remove hub

Windshield Wiper Shafts ... Sparingly 10W **MO** [★]

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two square head brake adjusters are provided on each backing plate

Adjust the brakes as follows:

Front brakes

1. Rotate one adjuster in direction of forward wheel rotation until drum locks
2. Back off adjuster just enough for drum to turn freely
3. Repeat procedure at other adjuster
4. Repeat steps 1, 2 and 3 for other front wheel

Rear brakes

5. Proceed as above for forward adjusters; tighten rear adjusters in opposite direction

Bleeding sequence: RR, LR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

- [★] **Every 2,000 miles**
- [4] **Every 4,000 miles**
- [8] **Every 8,000 miles**
- [10] **Every 10,000 miles**
- [12] **Every 12,000 miles**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant

PORSCHE

1951-65 All Models Except Carrera

1951-59

1960-62

HOOD RELEASE: Inside

1963-65

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All 6-volt	19	84

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	125

SPARK PLUGS

Bosch W225T7 (W225T1 may be used)
Champion L-87Y (L-85 may be used)
Gap: .020"-.024", except Bosch W225T7, .024"-.028"
Torque: 20 ft. lb.

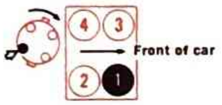
IGNITION POINTS

Bosch
Gap: .016"
Dwell angle: 47°-53°

CONDENSER

Bosch
Capacity: .27-.32 mfd

Cylinder Numbering Sequence

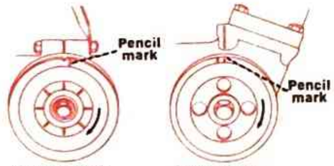


Firing Order: 1, 4, 3, 2

TIMING PROCEDURE

1. Place mark on pulley to right of notch as follows:
   Models 1600S-90, 1600SC, 3/32"; others, 1/4"
   Notch on pulley represents 0° BTDC
2. Turn pulley until mark is aligned with split in crankcase (early models) or mark on crankcase (late models)
3. Connect 6-volt test lamp to distributor primary terminal and to ground
4. Loosen distributor clamp screw and turn housing until points just open, as indicated by test lamp (to eliminate backlash final movement should be in counterclockwise direction)
5. Make certain that rotor points to notch in distributor housing rim. Tighten clamp screw securely

Timing Mark and Setting



Early models　Late models

Timing Setting (Before Top Dead Center):
1600S-90, 1600SC, 3° (3/32" from notch)
Others, 5° (1/4" from notch)

FUEL PUMP

Solex
Pressure: 2 lb. at 1000-3000 rpm
Volume: 10 ounces per minute at 4500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
SOLEX	
Twin 1-bbl.	1½
Twin 2-bbl.	1½
ZENITH	
Twin 2-bbl.	1½

No choke valve. Accelerator pump used for cold starts

ENGINE IDLE SPEED

Normal engine, 700-800 rpm
Super engine, 700-900 rpm

VALVE CLEARANCES

(engine cold, not running)
Use clearance specified on fan cover

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

6 **Steering Gear** (plug) .... 90 **HP**
To reach, remove cover plate under front hood
Special tool required to remove fill plug

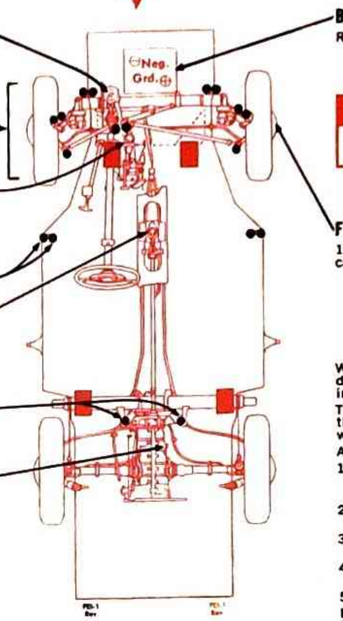
★ **Front Suspension and Steering Linkage** .... (12 fittings) **CL**

3 **Brake Master Cylinder** (cap) .... **HB**
Fill to 5/8-3/4 inch below top of reservoir
1951-63, to reach, remove cover plate under front hood
1964-65, reservoir under front hood

6 **Door Hinges** Both sides .... Sparingly **CL**

12 **Gearshift Lever** (inside car) .... **MO**
Press shift lever down, stretch rubber grommet and push oil can spout thru opening alongside lever. Lubricate with a few drops of oil

3 **Parking Brake Cables** .... Sparingly **CL**
Not on 1964-65



Battery .... Test and fill ★
Remove spare tire to service

LUBRICATION PRECAUTIONS

Lift car to remove weight from front wheels when lubricating front axle assembly

Front Wheel Bearings .... Repack **LM** 12
1964-65, tighten adjusting nut until thrust washer can just be moved sideways with a screw driver

TRANSAXLE .... HP

Above +32°, 90; below +32°, 80
3 Maintain level to ½ inch below fill plug hole with wheels on ground
CAPACITY 7 pints
12 **DRAIN and REFILL**
Models prior to 1957 have 2 drain plugs

GAS TANK

	Gallons
1951-62	13¾*
1963	13¼*
1964-65	12½*

* Includes 1½ gallons reserve

TIRES

Pressure	Front	Rear
5.00-16	20-21½*	21½-25*
5.60-15	18½	23
High-speed driving	21½	25½
5.60-15, Michelin X tires	16	18
High-speed driving	18	20
165-15 braced tread	23	26
High-speed driving	26	28

* Vary pressure depending on driving conditions

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two adjusters are provided on each brake, reached through hole in brake drum, except disc brakes which are self-adjusting

Adjust the brakes as follows:

1. Raise car, remove hub caps, apply pedal firmly a few times, turn wheel until one adjuster is visible behind hole in drum
2. Turn each adjuster until the wheel can just be turned by hand
3. Back off each adjuster 5-6 teeth until drum revolves freely without drag
4. Depress pedal firmly a few times and recheck the adjustments
5. Repeat procedure at each wheel

Bleeding sequence (except disc brakes): RR, LR, RF upper, RF lower, LF upper, LF lower. Disc brakes: LR outer, LR inner, RR outer, RR inner, RF outer, RF inner, LF outer, LF inner

KEY TO INTERVALS

★ Every 1,500 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
C Conditional service
Clean fuel pump strainer when necessary

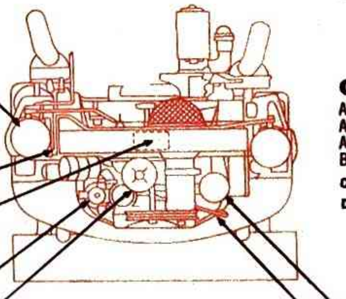
Air Cleaner Elements Both sides .... Service
★ Dry type .... Clean
6 Dry type .... Replace
3 Wire gauze .... Wash and oil **MO**

6 **Carburetor Controls** .... **MO**

6 **Oil Strainer** .... Clean
To reach, remove plate, bottom of crankcase; add extra 3/8 quart oil

C **Fuel Pump Strainer** .... Clean

6 **Oil Filter** .... Replace
Add extra quart oil



CRANKCASE .... "MS" MO

Above +85°	40
Above +32°	30
Above −5°	20
Below −5°	10W

CAPACITY 3⅛ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap

Crankcase Dipstick .... Check level

🟥 Position for lift adapter
● Lubrication fitting

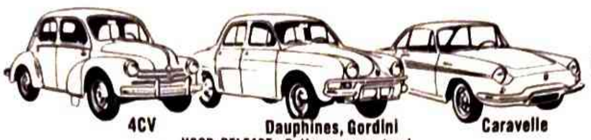
FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant	**HB** Hydraulic Brake Fluid, Heavy-Duty	**LM** Lithium Grease	
	HP Hypoid Gear Lubricant	**MO** Motor Oil	

RENAULT

1955-65 4CV (R.1062), Dauphine (R.1090, -1094), Gordini (R.1091), Dauphine 40 (R.1095), Caravelle (R.1092)



HOOD RELEASE: Button on rear hood

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
4CV, 1955-61 early Dauphine	18 (6-volt)	75
1959 late -65 Dauphine, Caravelle, Gordini	24	50

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
All	95-135

Maximum variation between cylinders, 15 psi

SPARK PLUGS

4CV, Dauphine except 40: AC 45F; Autolite AE6, AE62; Champion L-10; Marchal 37S
Dauphine 40, Caravelle, Gordini: AC 44F; Autolite AE4; Champion L-7, L-10S; Marchal 36
Gap: .025"-.028"
Torque: 12 ft. lb.

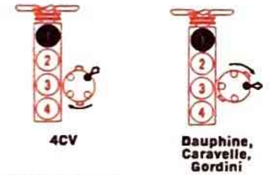
IGNITION POINTS

S.E.V. or Ducellier
Gap: .016"-.020"
Dwell angle: 54°-58° (56° preferred)

CONDENSER

S.E.V. or Ducellier
Capacity: .23 mfd

Cylinder Numbering Sequence



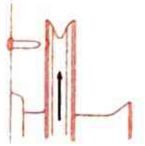
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Connect suitable test light to distributor primary terminal and to ground
2. Turn crankshaft pulley until notch is ⅛"* before pointer
3. Turn distributor housing until points just open, as indicated by test light
4. Lock distributor and turn pulley several times to recheck setting

* 4CV, Caravelle, Gordini, and early Dauphine models are timed as indicated in step 2. Late Dauphine models are timed with notch aligned with pointer

Timing Mark and Setting



Timing Setting (Before Top Dead Center): Pulley notch ⅛" before pointer except late Dauphine, notch aligned with pointer

FUEL PUMP

S.E.V. type 46J, 46AJ
Pressure: 2-2½ lb. at approximately 1000 rpm
Volume: Approx. 1 pint in 1 minute at 1000 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches)
SOLEX		
4CV 1-bbl. 22ICBT	2	index
Dauphine 1-bbl. 28IBT	2	index
Caravelle, Gordini 1-bbl. 32PIBT	2	index
ZENITH 1-bbl. 28IFT	2	index

ENGINE IDLE SPEED

600 rpm, including automatic shift transmission

VALVE CLEARANCES

(engine cold, not running)
Intake .006"; exhaust .008"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Steering Gear .... Sparingly **CL**
★ 1955-62
6 1963-64
Use low pressure. To reach fitting, remove spare tire on early Dauphine, metal panel on 4CV
Dauphine after fabrication number 62508 (R.1094) and 15662 (R.1095) sealed units, no service required

★ **Front Suspension and Steering Linkage** .... (6 fittings) **CL**

★ **Pedal Shaft** (plug) .... **CL**
On late models. Remove rubber plug from under car

3 **Windshield Wiper Shafts** ... Sparingly 10W **MO**

TRANSAXLE .... 80 EP

If 80 grade is not available in warm weather, 90 may be used temporarily. Models with automatic shift transmission, use 75 below +32°

3 Models with 3 plugs at bottom, remove center plug at bottom of differential case for checking level. Add lubricant thru fill plug until it runs out at level check plug, allow excess to drain before replacing plug

3 Models with 2 plugs at bottom, fill to lower edge of fill and level plug

CAPACITY With 3 plugs at bottom, 2¼ pints; 2 plugs, 3 pints except R.1095 with type 330 Transaxle, 4 pints

6 **DRAIN and REFILL**
Drain thru both plugs

Rear Wheel Bearings .... Sparingly **WB**
Use low pressure
6 1955-64 (fitting)
30 1965 (plug)
Remove plug, install 10 mm fitting to lubricate, reinstall plug

GAS TANK	Gallons
4CV	7
Caravelle, Dauphine, Gordini	8½

TIRES ... Pressure	Front	Rear
135-380 (5.0-15)	13	23
145-380 (5.5-15)	14	23

3 Rotate tires, Method G, then balance wheels

3 **Heater Filter Screen** .... Clean
Blow element with air gun

COOLING SYSTEM ... Quarts	With Heater
4CV	5½
Caravelle, Dauphine, Gordini	5

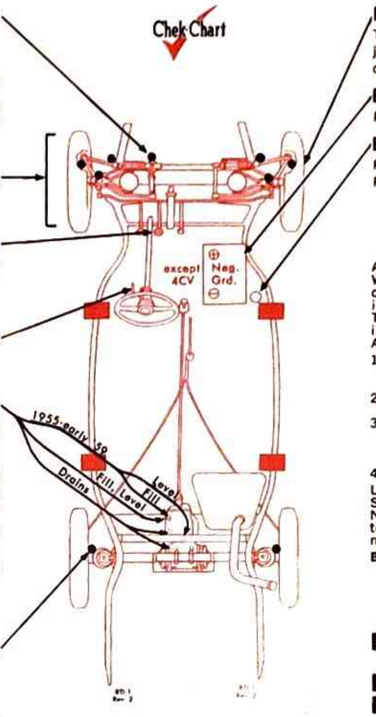
Cooling system pressure, 4 pounds

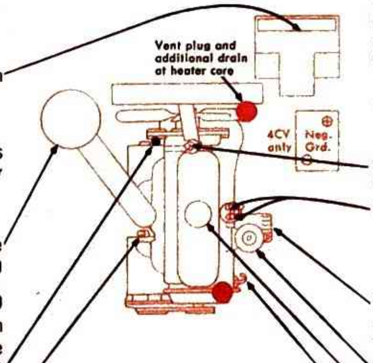
Air Cleaner Element .... Service
3 Oil bath section .... Wash and fill **MO**
Crankcase grade. Fill to level mark
3 Oil-wetted section .... Wash and oil **MO**
6 Dry type .... Clean
12 Dry type .... Replace

★ **Fan Belt Tensioner Pulley** .... Sparingly **WB**
Late models, no lubrication

3 **Generator** (plug) .... Sparingly **MO**
Models with 12-volt battery, no lubrication

Chek-Chart





🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

Front Wheel Bearings .... Repack **WB** **6**
Tighten adjusting nut until wheel drags slightly, just so nut washer can be moved with screw driver, insert cotter pin

Battery .... Test and fill ★
Fill to ½ inch above plates

Brake Master Cylinder (cap) .... **HB** ★
Reach from luggage compartment. 4CV, left side
Fill to "Maximum" mark

BRAKE ADJUSTMENT

All except late Dauphine:
With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
Two adjustment cams are provided on each backing plate
Adjust the brakes as follows:

1. While revolving the wheel in direction of forward rotation turn forward cam in direction of wheel rotation until shoe contacts drum
2. Back off adjustment until drag is just eliminated
3. Adjust rearward cam in same manner except revolve wheel in direction of reverse rotation and turn cam in direction of wheel rotation to expand shoe
4. Repeat steps 1, 2 and 3 at each wheel

Late Dauphine:
Self-adjusting disc brakes are used on all wheels. No adjustment is required. Replace pads when total thickness (including metal portion) is .217" minimum

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ 1955-62, Every 1,500 miles
1963-65, Every 3,000 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
30 Every 30,000 miles

CRANKCASE	"MS"	MO
Above +32°	20W	10W-30
Above +10°	10W	10W-30
Below +10°		5W-20

CAPACITY 4CV, 2 quarts; Caravelle, Dauphine, Gordini, 2½* quarts
* If filter is not changed, an additional amount may be required to make up for filter drainage

DRAIN and REFILL
See Service Instructions, page 4

Water Pump (plug or fitting) ..... Sparingly **WP** **12**
Late models, no lubrication

Distributor
Cam bearing (wick under rotor) . Sparingly **MO** **3**
Cam lubricator (wick) .... Sparingly **MO** **3**
On 1955-59 only

Oil Filter .... Replace **6**
Add extra pint oil
On late models

Fuel Pump Filter Screen .... Clean **6**

Oil Fill Cap

Crankcase Dipstick .... Check level

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant	HB	Hydraulic Brake Fluid, Heavy-Duty	WB	Wheel Bearing Grease
EP	Extreme Pressure Gear Lubricant	MO	Motor Oil	WP	Water Pump Grease

RENAULT

1963-65 Caravelle (R.1131); Caravelle 1100 (R.1133); R-8 (R.1130); R-8 1100 (R.1132)

Caravelle

R-8

HOOD RELEASE: Button on or below rear hood

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
Caravelle	24	40, 50
R-8	22NL	40, 50

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
Caravelle	105-155*
R-8	100-145*

* Permissible variation between cylinders, 15 psi

SPARK PLUGS

Caravelle R.1131: AC 43F; Bosch W225T1; Champion J-6, H-8, H-88; Marchal 35S
R-8 R.1130: AC 44F; Bosch W175T1; Champion H-8, H-88; Marchal 36
Caravelle R.1133, R-8 R.1132: AC 44F; Marchal 36
Gap: .025"-.028"
Torque: 10-15 ft. lb.

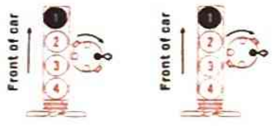
IGNITION POINTS

S.E.V. or Ducellier
Gap: .016"-.020"
Dwell angle: 54°-58° (56° preferred)

CONDENSER

S.E.V. or Ducellier
Capacity: .23 mfd

Cylinder Numbering Sequence



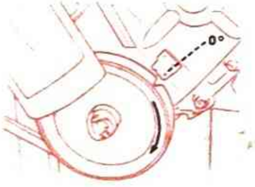
S.E.V. Ducellier

Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Connect 12-volt test lamp to distributor primary terminal and to ground
2. Bring number 4 piston (nearest rear of car) to TDC position, as indicated by notch in pulley being aligned with 0° tooth of stationary marker
3. Turn distributor housing until points just open, as indicated by test lamp
4. Final movement of distributor housing must be in counterclockwise direction to eliminate backlash
5. Tighten distributor clamp screw and rotate pulley two complete turns to recheck accuracy of setting

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
All, 0° (TDC)

FUEL PUMP

S.E.V. model 46AV
Pressure: 2-2½ lb. at 1000 rpm
Volume: 1 pint in 1 minute at 1000 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches)
SOLEX		
1-bbl. 32PDIST	2	index
1-bbl. 32 DISTA	2	index
ZENITH		
1-bbl. 32IGT	2	index
1-bbl. 34IGT	2	index

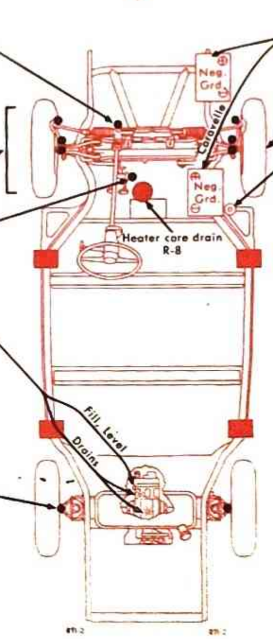
ENGINE IDLE SPEED

600 rpm

VALVE CLEARANCES

(engine cold, not running)
Intake .005"; exhaust .008"

SERVICE AT INTERVALS SHOWN BY SYMBOLS



★ **Steering Gear** . . . . Sparingly **CL**
1963-64 models
Use low pressure. Inspect rubber boots for damage. To reach fitting, remove spare tire, or use long nozzle from left side

★ **Front Suspension and Steering Linkage** . . . . (0* or 6 fittings) **CL**
* 1965 models, no fittings

★ **Pedal Shaft** . . . . **CL**
Remove rubber plug to reach

TRANSAXLE . . . . 80 EP

If 80 is not available in warm weather, 90 may be used temporarily. Models with automatic shift transmission, use 75 below +32°

★ Maintain level to fill plug hole

CAPACITY 3 pints except R.1132, R.1133 with type 330 transaxle, 4 pints

6 **DRAIN and REFILL**
To drain, remove 2 bottom plugs

Rear Wheel Bearings . . . . Sparingly **WB**
Use low pressure

12 1963-64 (fitting)

30 1965 (plug)
Remove plug, install 10 mm fitting to lubricate, reinstall plug

GAS TANK . . . . Gallons

Early R.1130	7½
Late R.1130	10
R.1131	8
R.1132, R.1133	10

TIRES

Pressure	Front	Rear
135-380; 145-380* (5.5-15)	14	23-25

* Includes Michelin X tire

★ Rotate tires, Method G

COOLING SYSTEM . . . . Quarts

	With Heater
Caravelle	8
R-8	6⅝

Cooling system pressure: Sealed system. Special 9-lb. valve located in expansion tank. No regular checking required. Permanent (anti-freeze) coolant installed by manufacturer

Air Cleaner Element . . . . Service

6 Dry type . . . . Clean

12 Dry type . . . . Replace

Battery . . . . Test and fill ★

Front Wheel Bearings . . . . Repack **WB** **6**

Brake Fluid Reservoir (cap) . . . . **HB** ★
Maintain level to "Maximum" mark on reservoir
Reach from luggage compartment

BRAKE ADJUSTMENT

Self-adjusting disc brakes are used on all wheels. No adjustment is required. It is recommended that all brake pads (2 per wheel) be inspected at regular intervals. Replace pads when total thickness (including metal portion) is .217" minimum

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
30 Every 30,000 miles

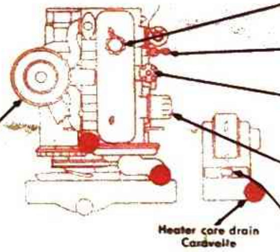
CRANKCASE . . . . "MS" MO

Above +10°	10W-30
Below +10°	5W-20

CAPACITY 2½* quarts

* If filter is not changed, an additional amount may be required to make up for filter drainage

DRAIN and REFILL
See Service Instructions, page 4



Oil Fill Cap

Crankcase Dipstick . . . . Check level

Distributor
Wick under rotor . . . . Sparingly **MO** ★

Oil Filter . . . . Replace **6**
Add extra pint oil

Heater Filter Screen . . . . Clean **6**
Caravelle only. Blow element with air gun

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant	**HB**	Hydraulic Brake Fluid, Heavy-Duty
EP	Extreme Pressure Gear Lubricant	**MO**	Motor Oil
WB	Wheel Bearing Grease		

SAAB

1956-65 93, 93B, 93F, 95, 96, GT-750, GT-850

1956-60

1961-64

HOOD RELEASE: Inside

1965

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	Special	34

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
93, 93B	97-115
93F, 95, 96	100-115
GT-750, GT-850	115-125

SPARK PLUGS

GT-750: Normal and slow speed, Bosch M240T1; limited hi-speed, M270T1; continual hi-speed, Champion UK-7
GT-850: Champion UK-7
Others: Low speeds, Bosch M175T1; normal driving, Champion UK-10
Gap: .024"-.028"
Torque: 28 ft. lb.

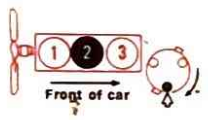
IGNITION POINTS

Bosch
Gap: .012"-.016"
Dwell angle: 77°-83°

CONDENSER

Bosch
Capacity: .26 mfd

Cylinder Numbering Sequence

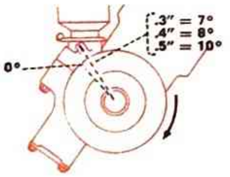


Firing Order: 1, 2, 3

TIMING PROCEDURE

1. Remove spark plugs
2. Loosen distributor clamp screw
3. Connect 12-volt test lamp to distributor primary terminal and to ground
4. Models 93, 93B, 93F; place mark on pulley .4" clockwise of notch and align with mark on engine block. This setting is 8° BTDC position for No. 2 piston
   Models 95, 96, GT-850; place mark on pulley .5" clockwise of notch and align with mark on engine block. This setting is 10° BTDC position for No. 2 piston
   Model GT-750 align pulley notch with mark on engine block. This setting is TDC position for No. 2 piston
5. Turn distributor housing counterclockwise until test lamp just goes on
6. Lock distributor clamp screw securely

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
93, 93B, 93F, 8°; 95, 96 (without vacuum advance), 10°; 95, 96 (with vacuum advance), 7°; GT-750, 0°; GT-850, 10°

FUEL PUMP

S.U. electric model L; Bendix electric
Pressure: Pump must push fuel to a height of 20"
Volume: 16 ounces in 1 minute or less

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
SOLEX	
1-bbl. 40 AI	2
Triple 1-bbl. 34 BIC	2
ZENITH	
1-bbl 34 VNN	2

Preheating tube should be connected to air cleaner inlet during cold weather

ENGINE IDLE SPEED

700-800 rpm

VALVE CLEARANCES

None. Two-stroke cycle engine is used in all models

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater
All models	7

Cooling system pressure, 4 pounds

ENGINE OIL RESERVOIR ..... TO

GT-850 only
Check level on sight gage when refueling
CAPACITY 3 quarts

TRANSAXLE .... MP

3-Speed: above +32°, 90; below +32°, 80; 4-Speed, 80
★ Maintain level to level plug hole
CAPACITY 1956-62, 4 pints; 1963-65, 3 pints
8 **DRAIN and REFILL**

★ **Inner Drive Shaft** (oil hole).......... 10W **MO**
Sparingly

★ **Brake Fluid Reservoir** (cap)............... **HB**
Fill to ½ inch below top of reservoir

★ **Steering Gear** .... **CL**

★ **Front Suspension, Universal Joints and Steering Linkage**.......(6 or 8 fittings) **CL**
30 **Outer Universal Joints** 1965....Repack **CL**

★ **Clutch and Brake Pedals** (2 oil holes)..10W **MO**
Reach from inside car

8 **Speedometer Cable**.......Sparingly 10W **MO**

★ **Hand Brake Cables**...................... **CL**
On 93, 93B only

32 **Rear Wheel Bearings**.............Repack **BR**

ENGINE LUBRICATION, Without Reservoir

Lubricating oil is mixed with the gasoline when refueling, as follows:

All ex. GT-850............**TO** or 30 "MS" **MO**
Pour **1 quart** oil in tank, then add **7 to 8 gallons** of gasoline. Premium gasoline is recommended for Model GT-750

Below +32°, to facilitate complete blending of oil and gasoline, predilute cold oil with gasoline in 1-to-1 ratio before pouring into tank. Use mixture ratios as shown above

Model GT-850 do not put oil in fuel tank

FUEL TANK

	Gallons
93, 93B, 93F, GT-750*	9½◆
95	11½◆
96	10½◆
GT-850*	10½

* Use premium grade gasoline
◆See ENGINE LUBRICATION Instruction

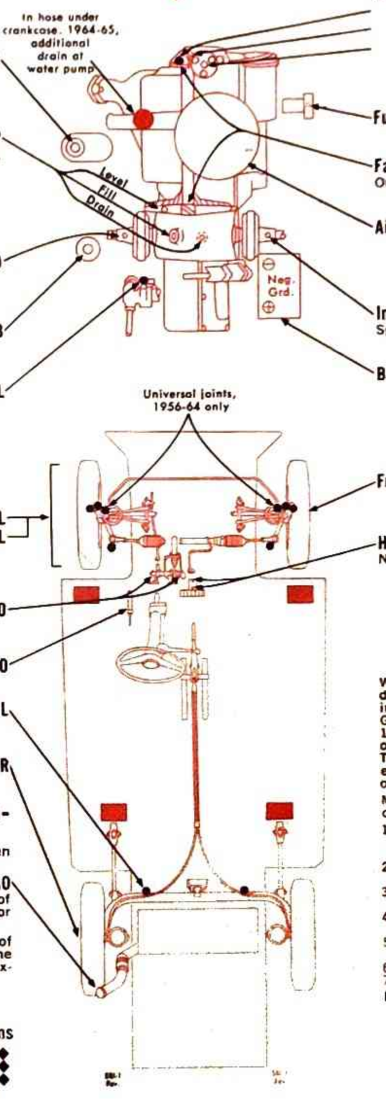
TIRES

Pressure	Front	Rear
5.00-15	26	20-24*
5.20-15	26	20-24*
5.60-15	23	20-26*
155-15	22-24*	21-23*

* Depending on load and speed

8 Rotate tires, Method F, then balance wheels

Chek-Chart


In hose under crankcase. 1964-65, additional drain at water pump
Level
Fill
Drain
Neg. Grd.
Universal joints, 1956-64 only

Distributor

Drive gear (except GT-850)	CL	★
Drive shaft (oil cup)	40 MO	★
Shaft (under rotor)	Sparingly 40 MO	8
Cam assembly (felt pad)	Sparingly BR	8

Fuel Pump Screen.................... Clean 8

Fan Shaft Bearings............. Repack **BR** 16
On 1956-64 only

Air Cleaner Element................ Service
Dry type .... Replace 20
Oil-wetted............ Wash and oil **MO** ★

Inner Drive Shaft (oil hole)........... 10W **MO** ★
Sparingly

Battery..................... Test and fill ★

Front Wheel Bearings............ Repack **WB** 30

Heater Fan Motor Bearings.......... 10W **MO** 16
Necessary to remove motor to oil bearings

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
GT-850 has self-adjusting disc brakes on front
1964-65 models have self-adjusting drum brakes on front
Two slot-head adjustment screws are used on each front brake, one slot-head adjustment screw on each rear brake

Models with adjustable front brakes and all rear drum brakes, adjust the brakes as follows:

1. If there is no adjustment hole in drum, remove one lug bolt from each wheel. Late models, rear brake adjusts from backing plate
2. Rotate wheel until lug bolt hole or adjustment hole aligns with adjustment screw
3. Turn adjusting screw clockwise until drum is locked and cannot be turned by hand
4. Back off adjustment screw one or more notches until drum turns freely without drag
5. Repeat steps 2, 3 and 4 for second adjustment screw
6. Repeat procedure at each wheel
7. Replace lug bolts securely

Bleeding sequence: LR, RR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

★ Every 2,000 miles
8 Every 8,000 miles
16 Every 16,000 miles
20 Every 20,000 miles
30 Every 30,000 miles
32 Every 32,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

BR Ball and Roller Bearing Lubricant
CL Chassis Lubricant
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO Motor Oil
MP Multi-Purpose Gear Lubricant
TO Saab Two-Cycle Motor Oil
WB Wheel Bearing Grease

SIMCA

1956-61 All Aronde Models
1962-63 Simca 5

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1956-61 Aronde	27SL	50
1962-63 Simca 5	24	55

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

Flash engine 135-150*

Flash Special engine 150-160*

Rush Super engine 155-170**

* Maximum variation between cylinders, 15 psi

** Maximum variation between cylinders, 20 psi

SPARK PLUGS

Champion, H-8; Marchal: Flash engs., 36; Rush Super eng., 35

Gap: .024"-.025"

Torque: 18-22 ft. lb.

IGNITION POINTS

S.E.V., Ducellier

Gap: .017"-.019"

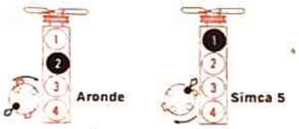
Dwell angle: 55°-57°

CONDENSER

S.E.V., Ducellier

Capacity: .28 mfd

Cylinder Numbering Sequence



Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

Simca 5 (Rush Super engine):

1. Connect timing light to No. 1 spark plug or distributor cap tower
2. Run engine at idle rpm and turn distributor to obtain alignment of correct pulley notch with pointer

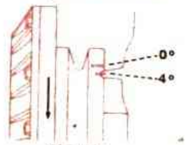
Other engines:

Accurate timing is possible only when using Simca Top Dead Center Gauge Tool 7313-T

1. Turn engine until distributor rotor is in position to fire No. 2 cylinder
2. With tool inserted in No. 2 spark plug hole, piston is accurately brought to TDC by slowly moving car backward and forward in 4th gear until gauge pointer reaches extreme upper position. This is TDC, note this position on gauge
3. Push car backward about 1 ft., then forward until pointer indicates 1½* marks before TDC position previously observed
4. Turn distributor until points just open as indicated by light in tool

* Flash Special engine is timed at TDC

Timing Mark and Setting



Simca 5

Timing Setting (Before Top Dead Center): Flash and Rush Super engines, 4°; Flash Special engine, 0°

FUEL PUMP

S.E.V.

Pressure: Flash engs. 1-2½ lb.; Rush Super eng. 2-3½ lb.; at 1000 rpm

Volume: Minimum of 1 pint per minute at idle rpm

CARBURETOR ADJUSTMENT

SOLEX	Idle Mixture (initial turns)	Choke (notches) Man. Trans.
1-bbl. 32PBICT	2-3	index
1-bbl. 32PBIC	2-3	index*
1-bbl. 34PBIC	2-3	manual

* Some models, manual

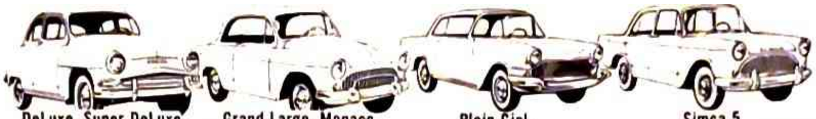
ENGINE IDLE SPEED

650 rpm

VALVE CLEARANCES

(engine cold) Intake .004"; exhaust .006"

(engine hot) Intake .008"; exhaust .010"



DeLuxe, Super DeLuxe
Chatelaine, Ranch

Grand Large, Monaco
Elysee, Etoile, Montlhery

Plein Ciel,
Oceane

Simca 5

HOOD RELEASE: Front, except Plein Ciel and Oceane, inside

SERVICE AT INTERVALS SHOWN BY SYMBOLS

HOOD RELEASE: Front, except Plein Ciel and Oceane, inside

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	7½	6½

Cooling system pressure, 4 pounds

[30] **Oil Filter** 1962-63 .... Clean
Remove cover to clean; replace "O" ring

★ **Steering Gear** (plug) .... MP, GL4
Above +20°, 80; below +20°, 75

★ **Water Pump** .... WP
Use low pressure

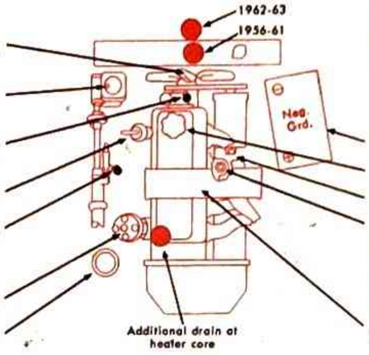
Crankcase Dipstick .... Check level

★ **Gearshift Control Cable** CL
Some models, no lubrication

[3] **Distributor**
Wick under rotor .... MO

★ **Brake Supply Tank** (cap) .... HB
Fill to "Maximum" mark on tank

Chek Chart



CRANKCASE

		"MS" MO
Above +32°	30	20W-40
Above +10°	20W	10W-30, 20W-40
Above −10°	10W	10W-30, 5W-20
Below −10°	5W	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Fill Cap

Generator (oil hole) .... MO [3]

Oil Filter Screen 1956-61 .... Wash [3]
When changing crankcase oil, remove entire filter assembly and copper seal by unscrewing large hex nut. Do not unscrew smaller hex nut cap covering oil pressure regulator screw. Separate two filter screens, wash in solvent and reassemble. Replace copper seal at every service interval

Air Cleaner Element .... Service
Dry type .... Clean [6]
Dry type .... Replace [12]
Oil bath .... Wash and fill MO [8]

★ **Front Suspension and Steering Linkage** .... (16 fittings) CL
Use low pressure, except Simca 5

★ **Clutch Pedal** CL

★ **Parking Brake Pull Rod Shaft** .... Coat WG
1962-63, right side of steering column

TRANSMISSION .... MP, GL4

Above +20°, 80; below +20°, 75
★ Maintain level to fill plug hole
CAPACITY 2¼ pints
[10] **DRAIN and REFILL**

★ **Parking Brake Cable Pulley** .... MO

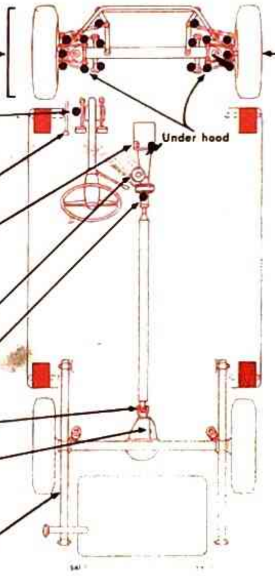
★ **Universal Joint Spline** CL

[20] **Universal Joint** .... Repack WB

DIFFERENTIAL .... MP, GL4

Above +20°, 90; above −20°, 80; below −20°, 75
★ Maintain level to fill plug hole
CAPACITY 2 pints
[10] **DRAIN and REFILL**

★ **Rear Springs** .... PO



Front Wheel Bearings .... Check WB [10]
Clean and repack if necessary

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Two square head adjustment cams are provided on each backing plate

Adjust the brakes as follows:

1. Depress brake pedal firmly and block in this position (Simca tool No. C-886)
2. Turn forward adjustment cam in direction of forward wheel rotation until cam is felt to touch brake shoe. Use suitable socket and long extension bar which will reach to tread of tire at point nearest adjustment cam (Simca tool No. S-51)
3. Lift extension bar just enough to eliminate free play on adjustment cam. Carefully mark position of extension bar on tire tread
4. Measure exactly 2⅜" above this point on tire tread and make second mark on tread
5. Slowly raise extension handle until it aligns with upper mark on tire tread
6. Repeat step 2 for rear adjustment cam but turn cam in direction of rearward wheel rotation. Repeat steps 3 thru 5
7. Repeat steps 2 thru 6 for each wheel
8. Release brake pedal

Bleeding sequence: RR, LR, RF, LF

GAS TANK .... Gallons

All models 11

TIRES .... Pressure	Front	Rear
5.60-14	21	23
5.75-15	23	40

[6] Rotate tires, Method E, then balance wheels

🟥	Position for lift adapter
•	Lubrication fitting
●	Cooling system drain

KEY TO INTERVALS

★	Every 1,000 miles
[3]	Every 3,000 miles
[6]	Every 6,000 miles
[8]	Every 8,000 miles
[10]	Every 10,000 miles
[12]	Every 12,000 miles
[20]	Every 20,000 miles
[30]	Every 30,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
GL4	Multipurpose-Type Gear Lubricant API Service GL4
HB	Hydraulic Brake Fluid, Heavy-Duty
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
PO	Penetrating Oil
WB	Wheel Bearing Grease
WG	White Waterproof Grease
WP	Water Pump Grease

SIMCA

1962-65 1000

HOOD RELEASE: Lever on rear hood

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24	40

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	150-160

SPARK PLUGS

AC 44XL; Champion N4; Lodge HLN; Marchal 35HS; Marelli CW240L; Coupe, Marchal 34HS, AC 43XL

Gap: .024"

Torque: 18-21 ft. lb.

IGNITION POINTS

Ducellier or S.E.V.

Gap: .018"-.021"

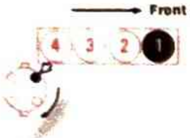
Dwell angle: 55°-57°

CONDENSER

Ducellier or S.E.V.

Capacity: .20-.30 mfd

Cylinder Numbering Sequence

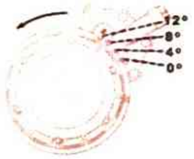


Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Slowly turn crankshaft pulley in direction of normal rotation (counterclockwise) until 12° notch on pulley rim is aligned with pointer on oil pump housing
2. Connect 12-volt test lamp to distributor primary terminal and to ground
3. Loosen distributor clamp screw and turn distributor housing until points just open, as indicated by test lamp. To avoid backlash, make final movement of distributor in counterclockwise direction
4. Check accuracy of setting by turning pulley two complete revolutions, noting the position of the notch when the points start to open

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 12°

FUEL PUMP

S.E.V.

Pressure: 1-2 lb. at 1000 rpm

Volume: 1 pint per 1 minute at idle rpm

CARBURETOR ADJUSTMENT

SOLEX	Idle Mixture (initial turns)
1-bbl. 32PBIC	1¼

ENGINE IDLE SPEED

600 rpm

VALVE CLEARANCES

(engine hot, not running)

Intake .014", exhaust .014"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

★ **Steering Gear** (plug) .... 80 or 90 **MP**
To reach, remove plate in luggage compartment

OC **Front Suspension** .... (4 fittings) **CL**
Use low pressure

★ **Brake and Clutch Fluid Reservoir** (cap) ...... **HB**
Maintain level to upper mark on reservoir
Located in luggage compartment

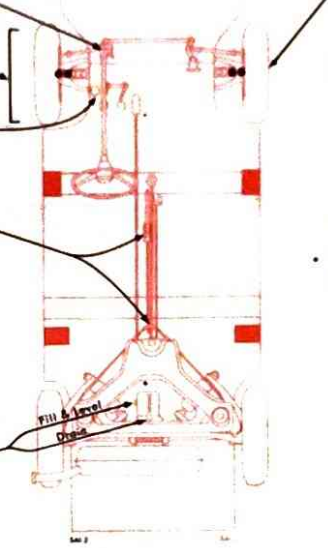
★ **Hand Brake Linkage** .... **MO**

GAS TANK	Gallons
All models	9½

TIRES	Pressure Front	Rear
5.60-12	15	25

8 Rotate tires, Method I

TRANSAXLE .... 90 **MP**
★ Maintain level ½" below plug hole
CAPACITY approx. 4 pints
6M DRAIN and REFILL



Front Wheel Bearings .... **WB**

Inspect	16
Repack	C

To adjust bearings, tighten nut to 11 ft. lb. Back off ½ turn on nut and retighten by hand pressure until minimum end play is obtained. Using suitable round tip punch, indent edge of adjusting nut into groove in spindle shaft

BRAKE ADJUSTMENT

With the brakes cold, if the pedal can be depressed more than 3", the need for adjustment is indicated. Two adjustment cams are provided on each backing plate. To tighten, turn both front brake cams and rear brake front cam in direction of forward wheel rotation. Tighten rear brake cam in opposite direction

Adjust the brakes as follows:

1. Turn one adjustment cam until heavy drag is felt when wheel is turned
2. Slowly back off cam until no drag is felt
3. Repeat steps 1 and 2 for other adjustment cam
4. Repeat steps 1, 2 and 3 for each brake

Bleeding sequence: RR, LR, RF, LF

Note: In case it is difficult to completely bleed hydraulic system, raise front end of car until master cylinder is horizontal, observing caution that brake fluid in reservoir does not spill over in luggage compartment

KEY TO INTERVALS

★ Twice Yearly
8 Every 8,000 miles
16 Every 16,000 miles
OC Every crankcase oil change
6M Every 6 months or 8,000 miles
2Y Every 2 years
C Conditional service
Repack front wheel bearings as required or at brake overhaul

COOLING SYSTEM	Quarts With Heater
All models	5¾

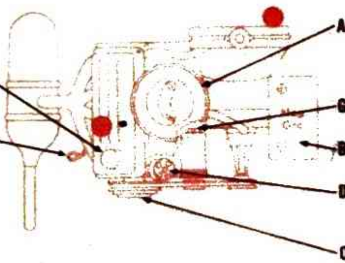
Cooling system pressure: 7 pounds

6M **Oil Fill Cap and PCV Valve** .... Wash
After engine no. 5025656, cap includes PCV Valve

Crankcase Dipstick .... Check level

CRANKCASE		"MS" MO
Above +32°	30	10W-30
Above +10°	10W	10W-30
Above −10°	10W	10W-30,5W-20
Below −10°	5W	5W-20

CAPACITY 2¾ quarts
DRAIN and REFILL
See Service Instructions, page 4



Air Cleaner Element .... Service

Dry type	Clean ★
Dry type	Replace 2Y

Generator (oil cup) .... Sparingly **MO** ★

Battery .... Test and fill ★

Distributor
Wick under rotor .... Sparingly **MO** ★

Oil Filter .... Clean ★
To clean, remove pressed on cover by screwing two bolts into two threaded holes in cover. Replace "O" ring. Service more often if operating conditions are severe

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant	**MO** Motor Oil	**WB** Wheel Bearing Grease
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3	**MP** Multi-Purpose Gear Lubricant	

SUNBEAM

1959-65 Alpine Series I, II, III, IV
1956-62 Rapier,
Rapier Series II, III, IIIA

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	29H	57

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
Rapier, Rapier Series II	140-150
Alpine Series I, Rapier Series III	170-180
Alpine Series II, III, IV, Rapier Series IIIA	165-175

SPARK PLUGS

Alpine Series IV, Champion N-5; others, N-4, high-speed driving, N-3
Gap: .025"
Torque: 18 ft. lb.

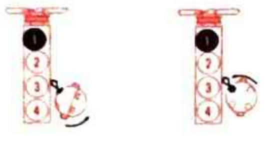
IGNITION POINTS

Lucas
Gap: .016"
Dwell angle: 57°-63

CONDENSER

Lucas
Capacity: .20 mfd

Cylinder Numbering Sequence



Early　　Late

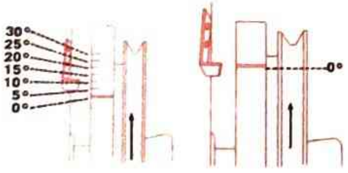
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Place mark on crankshaft pulley according to timing setting desired. (Alpine Series III, 8.5 mm on pulley equals 9°, 10 mm equals 11°; Alpine Series IV, 11.5 mm equals 9°, 14 mm equals 11°; others, 6 mm equals 5°, 9 mm equals 7°, 10 mm equals 8°, 12 mm equals 10°)
2. Center distributor vernier control except Alpine Series III, IV, set vernier so one mark is visible
3. Bring engine to operating temperature
4. Connect timing light to No. 1 spark plug or distributor cap tower, set idle speed to 600 rpm
5. Observe previously installed timing mark on pulley and turn distributor to obtain close alignment of mark with pointer on cover. Make final exact setting using vernier control
6. Reset to proper idle speed

Note: Additional performance may be attained by altering timing with distributor vernier control to obtain maximum acceleration from 20 to 50 mph in 4th gear. Spark knock must be avoided and use of premium fuel is recommended (One complete turn of vernier control knob alters timing 3°)

Timing Mark and Setting



Alpine Series IV　　Others

Timing Setting (Before Top Dead Center):
Alpine Series III, IV, 9°-11°; Others, 5°-7°
Optional 8.4:1 low-compression engine, 8°-10°

FUEL PUMP

AC type UG
Pressure: 1½-2½ lb. at cranking speed
Volume: 1 pint in 1 minute at idle rpm

CARBURETOR ADJUSTMENT

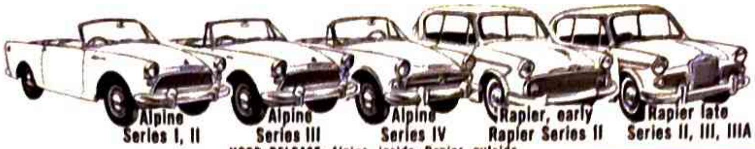
	Idle Mixture (initial turns)
SOLEX 2-bbl. B32PAIA	¾
STROMBERG 1-bbl. DIF36	¾
ZENITH Twin 1-bbl.; 36VIP, -WIA, -WIA2, -WIA3, -WIP2, -WIP3	¾

ENGINE IDLE SPEED

Manual Trans. 600-800 rpm except Alpine Series IV, 850 rpm
Auto. Trans. 750 rpm in NEUTRAL

VALVE CLEARANCES

(engine hot, not running)
Intake .012"; exhaust .014"



HOOD RELEASE: Alpine, inside; Rapier, outside

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts With Heater
Alpine Series I, II	9
Alpine Series III, IV	7½
Rapier	7½

Cooling system pressure, 6¼-7¼ pounds

Air Cleaner Elements (Series IV, One) ... Service
★ Dry type ... Clean
12 Dry type ... Replace
3 Oil bath ... Wash and fill MO
3 Wire gauze ... Wash and oil MO

6 **Generator** (oil hole) ... MO

★ **Battery** Rapier ... Test and fill

3 **Steering Gear** (rubber plug or fittings) ... EP
Above +10°, 140; below +10°, 90
Early models, 2 or 3 fittings; late, rubber plug
With fittings, to lubricate, turn wheels fully to right

★ **Brake Master Cylinder** (cap) ... HB
Fill to max. mark or ½ inch below top

★ **Clutch Master Cylinder** (cap) ... HB
Fill to max. mark or ½ inch below top

6 **PCV System Valve** ... Clean CC

★ **Front Suspension and Steering Linkage** (0 or 11 to 21 fittings) LM
Alpine Series IV, no fittings

TRANSMISSION ... "MS" MO

Alpine Series IV with fully synchronized transmission, 10W-30; others, above −10°, 30; below −10°, 20,20W

★ Maintain level to upper mark on dipstick, except late Rapier and Alpine Series III, IV, to bottom edge of fill plug opening
Reach dipstick thru floor. Alpine Series III, IV, reach fill plug through opening in right side of floor
CAPACITY 3¼ pints; with overdrive, 4¾ pints
6 **DRAIN and REFILL**
Overdrive, drain thru separate plug near left side, fill slowly thru transmission
Before draining, operate switch 10 to 12 times with ignition ON and 4th gear engaged

6 **Overdrive Oil Pump Filter Screen** ... Clean
Remove plate on left side to reach screen

★ **Universal Joints** ... 140 EP or LM
Use low pressure. Alpine Series III, IV, no lub.

★ **Hand Brake Cable** ... LM
Alpine Series III, IV, no lub.

★ **Battery** Alpine ... Test and fill

DIFFERENTIAL ... EP

Hypoid: Above −10°, 90; below −10°, 80
Spiral Bevel: Above +32°, 140; above −10°, 90; below −10°, 80
★ Maintain level to fill plug hole
CAPACITY 2 pints
6 **DRAIN and REFILL**

12 **Rear Shock Absorbers** ... SA
On export model Alpine Series I, II. Remove to service
Fill to bottom of filler hole threads while moving arm thru full strokes

GAS TANK

	Gallons
Alpine Series I, II	10¾
Alpine Series III, IV	13¼
Rapier	12

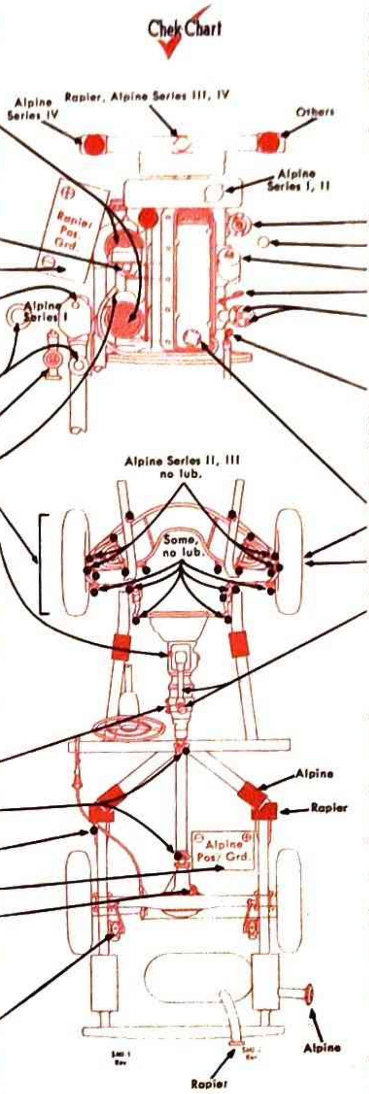
TIRES

Pressure	Front	Rear
Alpine: 5.60-13	22*	23*
Normal fast driving	25	27
5.90-13, 6.00-13	24*	24*
Normal fast driving	24	26
Rapier: 5.60-15	24◆	25■

* 5.60-13 or RS.5 tires: For prolonged fast touring, add 6 pounds
◆ High speed, add 6 pounds　■ Full load, 26

3 Rotate tires, Method B or G, then balance wheels

Chek Chart



CRANKCASE

		"MS" MO
Above +70°	30*	20W-40*
Above +20°	20,20W	10W-30
Above +5°	10W	5W-20
Below +5°		5W-20

* High-speed driving, particularly in hot weather, 40 or 20W-40

CAPACITY (including oil filter) 4¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Fuel Strainer ... Clean 6
Power Brake Breather Element ... Clean 6
Oil Filter ... Replace 6
Crankcase Dipstick ... Check level
Distributor
Cam bearing (under rotor) .. Sparingly 30 MO 3
Advance mechanism ... 30 MO 3
Lubricate sparingly thru hole around shaft

TRANSMISSION, Automatic AF

Check level, engine idling and at operating temperature, PARK position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5⅝	6⅝

DRAIN and REFILL Not recommended
Remove 1 oil pan drain plug. All fluid does not drain. Refill only to upper mark on dipstick

Oil Fill Cap

Wire Wheel Hub Splines ... LM 3
Clean and lubricate at each wheel

Front Wheel Bearings ... Repack LM 12
Initial torque, 15-20 ft. lb.; then adjust bearings to .002"-.007" end play

Floor Shift Mechanism ... MO 6

BRAKE ADJUSTMENT

Alpine, Rapier Series III, IIIA, self-adjusting disc brakes on front wheels, no adjustment required
Rapier drum brakes:

1. Remove wheel cover to expose adjustment hole in wheel and drum. If holes are not aligned, reposition wheel on drum
2. Turn wheel until adjustment hole aligns with slotted head adjustment cam
3. With screw driver, turn adjustment cam clockwise until shoes are locked against drum
4. Apply pedal firmly, make sure drum remains locked. If drum frees after brake application expand shoes until drum remains locked
5. Back off adjuster one notch, two notches if necessary, so drum turns freely without drag

Alpine rear drum brakes have a square head adjuster on each backing plate:

1. Turn adjuster clockwise until shoes are locked against drum
2. Apply pedal firmly, make sure drum remains locked. If drum frees after brake application expand shoes until drum remains locked
3. Back off adjuster until drum turns freely (usually two clicks)
   Note: A slight drag may be felt from trailing shoe but should not be sufficient to prevent wheel from being turned by hand
4. Spin wheel, apply pedal firmly to center shoes. Recheck adjustment

Bleeding sequence: LR, RR, RF, LF
Note: Rapier with disc brakes on front, bleed inner valve first

🟥 Position for lift adapter
● Lubrication fitting
🔴 Cooling system drain

KEY TO INTERVALS

★ **Every 1,000 miles**
Alpine Series III, IV: Every 3,000 miles
3 **Every 3,000 miles**
6 **Every 6,000 miles**
12 **Every 12,000 miles**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
EP	Mild Extreme Pressure Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MO	Motor Oil
SA	Shock Absorber Fluid, Light

SUNBEAM

1964-65 Imp

HOOD RELEASE: Rear, both sides of engine lid

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	Special	38

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
All	185-200

SPARK PLUGS

AC C44XL; Autolite AG3; Champion N-5; KLG FE75
Gap: .025"
Torque: 14 ft. lb.*
*Lubricate threads sparingly with graphite grease

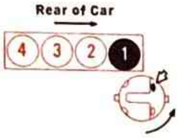
IGNITION POINTS

Lucas
Gap: .015"
Dwell angle: 57°-63°

CONDENSER

Lucas
Capacity: .20 mfd

Cylinder Numbering Sequence



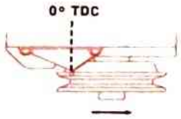
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Place mark on crankshaft pulley .275" (8 mm) before pulley notch. This equals 7° BTDC
2. Center distributor vernier control
3. Bring engine to operating temperature
4. Disconnect vacuum line
5. Connect timing light to No. 1 spark plug or distributor cap tower, set idle speed to 1000 rpm
6. Observe previously installed timing mark on pulley and turn distributor to obtain close alignment of mark with pointer on cover. Make final exact setting using vernier control
7. Reconnect vacuum line and reset to proper idle speed

Note: Spark knock must be avoided and use of premium fuel is required. (One complete turn of vernier control knob alters timing 3°; one vernier division equals 4°)

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
7° at 1000 rpm with vacuum disconnected (When stroboscopic timing light is not available, 3° (.118" or 3 mm) using 12-volt test lamp and standard static setting procedure)

FUEL PUMP

AC mechanical
Pressure: 1¼-2 lb. at cranking speed
Volume: 1 pint in 1 minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches)
SOLEX 1- bbl. B30PIHT	1-2	index

ENGINE IDLE SPEED

750 rpm

VALVE CLEARANCES

(engine cold, not running)
Intake .004"-.006"; exhaust .006"-.008"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Chek-Chart

★ **Steering Gear** .... 80 **MP**
Inspect boots for leakage. If leaks are evident, unit must be removed for refilling and repairs
CAPACITY ¾ pint

TRANSAXLE .... 80 **MP**
90 may be used above +68°
★ Maintain level to fill plug hole
CAPACITY 5½ pints
15 **DRAIN and REFILL**

GAS TANK	Gallons
All models	7¼

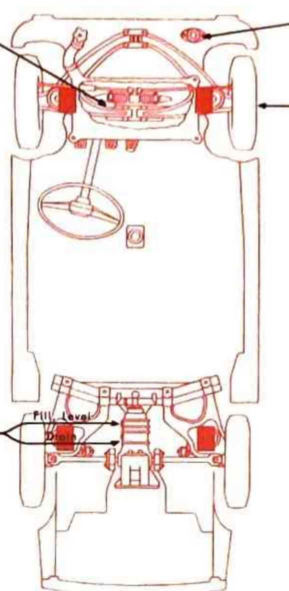
TIRES Pressure	Front	Rear
5.50-12	15*	30*

*Hi-speed driving, add 5 pounds

★ Rotate tires, Method D or G, then balance wheels

COOLING SYSTEM Quarts	With Heater
All models	5½

Cooling system pressure, 4 pounds



Brake and Clutch Fluid Reservoir .... **HB** ★
Maintain level to mark inside reservoir

Front Wheel Bearings .... Repack **LM** 30
While spinning wheel, tighten adjusting nut 4-5 ft. lb. Back off nut 2½-3 flats and install lock tab washer and lock nut. Tighten lock nut to 13 ft. lb. Make final check with dial indicator to verify .003"-.0065" end play and if necessary readjust to obtain this value

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Front brakes have two square head adjusters. Rear brakes are provided with a single square head adjuster which operates both shoes

Adjust the brakes as follows:

1. Turn adjuster until resistance is felt and drum cannot be turned by hand
2. Back off adjuster two clicks noting that drum should now turn freely without drag.
3. Repeat steps 1 and 2 for each front and rear adjuster

Bleeding procedure: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 5,000 miles
15 Every 15,000 miles
30 Every 30,000 miles

CRANKCASE		"MS" **MO**
Above +68°	30*	20W-40*
Above +20°	20W	10W-30
Above 0°	10W	5W-20
Below 0°	...	5W-20

*Continuous high speed driving particularly in hot weather, 20W-40 recommended or 40 may be used

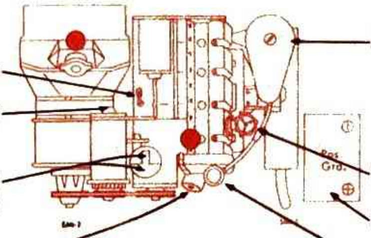
CAPACITY (including oil filter) 3¼ quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level

★ **Generator** (oil hole) .... Sparingly **MO**

Distributor
★ Cam bearing (under rotor) .... 30 **MO**
★ Advance mechanism .... 30 **MO**
Sparingly thru hole at edge of breaker plate

★ **Oil Filter** .... Replace



Air Cleaner Element .... Service
Dry type .... Clean ★
Dry type .... Replace 15
Oil bath .... Wash and fill **MO** ★
Crankcase grade

Fuel Pump Strainer .... Clean ★

Battery .... Test and fill ★

Oil Fill Cap

🟥 Position for lift adapter
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3	**LM**	Lithium Grease
MP	Multi-Purpose Gear Lubricant	**MO**	Motor Oil

TRIUMPH

1954-65 TR2, TR3, TR3-A, -B, TR4

TR2
TR3
TR3-A, -B
TR4

HOOD RELEASE: Inside, TR4 and early TR2; all others, at front

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	29H	57

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	120

Maximum variation between cylinders, 5 psi

SPARK PLUGS

Champion L-7*; Lodge CNY*
Gap: TR2, .032"; TR3, -3-A, -B, TR4, .025"
Torque: 25 ft. lb.
*For high-speed driving: L-5 or L-11S; HN or 2-HN

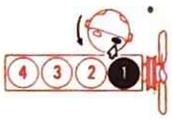
IGNITION POINTS

Lucas
Gap: .015"
Dwell angle: 57°-63°

CONDENSER

Lucas
Capacity: .2 mfd

Cylinder Numbering Sequence



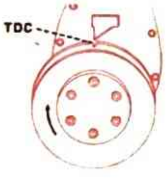
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Set No. 1 piston at TDC (hole in crankshaft pulley aligned with pointer)
2. Fully retard micrometer vernier on distributor (TR3-B, TR4, center vernier)
3. Connect 12-volt test lamp to distributor primary terminal and to ground
4. Loosen distributor clamp bolt and turn distributor until points just open as indicated by test lamp. Tighten clamp screw
5. Turn knurled screw on vernier counterclockwise to advance the timing 2 division marks on vernier scale (One division mark for TR4) This equals 4° of crankshaft advance

Note: Premium fuel is recommended to assure maximum performance. If lower octane is used, reduce timing advance accordingly

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 4°

FUEL PUMP

AC-Delco type VE
Pressure: 1½-2½ lb. at cranking speed
Volume: Approx. 1 pint in 1 minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
STROMBERG	
Twin 1-bbl. 175 C.D.	1½
S.U.	
Twin 1-bbl. H-4	1½
Twin 1-bbl. H-6	1½

ENGINE IDLE SPEED

850 rpm

VALVE CLEARANCES

(engine cold, not running)

TR2, TR3 (with steel rocker shaft pedestals): Intake .010"; exhaust .012"*
TR3, TR3-A, -B, TR4 (with aluminum rocker shaft pedestals): Intake .010"; exhaust .010"**
* For high-speed driving, both intake and exhaust .013"
** Normal and high-speed driving

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

Quarts	With Heater	Without Heater
TR4	8⅜	7⅞
All other models	8¼	8⅜

Cooling system pressure, 4 pounds

12 **Steering Gear** (plug) TR4 .... Sparingly **CL**
With steering at full left lock, remove plug, insert fitting. Use low pressure, do not swell retainer boots

Crankcase Dipstick .... Check level

★ **Steering Gear** (plug) TR2, TR3, TR3-A, -B .... **MP**
Above +30°, 90; below +30°, 80

6 **Oil Fill Cap** .... Wash
Late TR4, sealed cap
TR3-B, TR4, at rear of engine

Distributor
6 Cam bearing (under rotor) .... Sparingly **MO**
6 Advance mechanism .... Sparingly **MO**
Lubricate thru opening around cam

6 **Oil Filter** .... Replace
Add extra pint oil

6 **Fuel Pump Sediment Bowl and Screen** .... Clean
Also screens in carburetor float bowl unions

★ **Brake Fluid Reservoir** (cap) .... **HB**
Includes clutch reservoir
Fill to 1 inch below top of fill hole
Service both reservoirs on TR4

★ **Front Suspension and Steering Linkage** ..... (10 or 13 fittings) **CL**

6 **Clutch Cross Shaft** .... Sparingly **CL**

TRANSMISSION .... HP, GL4

Above +30°, 90; below +30°, 80
Models before Serial No. TS50000, the level gage is attached to fill plug. Reach thru floor on right side
★ Maintain level to top mark on gage or to fill plug hole
CAPACITY 1¾ pints; with overdrive, 3¼ pints
DRAIN and REFILL Not recommended, except for temperature requirements only
Overdrive, drain thru separate plug hole, fill thru transmission

6 **Overdrive Filter** .... Wash
After reinstalling filter, run car short distance in overdrive and recheck lubricant level in transmission

6 **Universal Joint** .... 140 **MP**
Reach thru opening in tunnel

6 **Universal Joint Spline** .... **CL**
Reach thru opening in tunnel

6 **Hand Brake Cable** .... **CL**

6 **Universal Joint** .... 140 **MP**

12 **Rear Shock Absorbers** .... Fill **SA**

6 **Rear Wheel Bearings** .... Sparingly **WB**
Use low pressure

DIFFERENTIAL .... HP, GL4

Above +30°, 90; below +30°, 80
★ Maintain level to fill plug hole
CAPACITY 1¾ pints
DRAIN and REFILL Not recommended, except for temperature requirements only

12 **Rear Springs** .... Coat **MO**

6 **Hand Brake Compensator** .... **CL**

GAS TANK

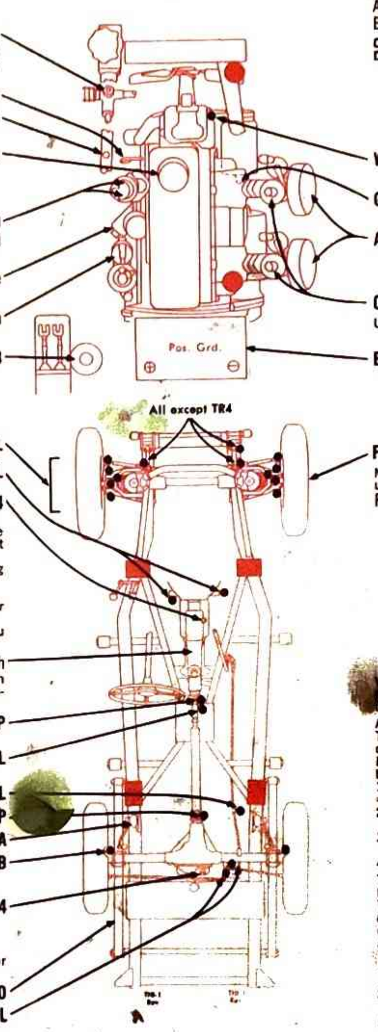
	Gallons
TR2	15
TR4	14
All other models	14⅜

TIRES

Pressure	Front	Rear
5.50-15	22*	24*
5.90-15, 6.00-15	22*	24*
After No. CT23383	24	28
Michelin X tires, TR2, TR3	24◆	28◆
Michelin X tires, TR4	24	32
After No. CT23383	22	38

* High speed, front 28, rear 30
◆ High speed, front 29, rear 33

6 Rotate tires, Method C, then balance wheels



CRANKCASE

	"MS" or	"DG" MO
Above +70°	40	20W-40
Above +40°	30	10W-30
Above +10°	20,20W	10W-30
Below +10°	10W	10W-30

CAPACITY 6 quarts
DRAIN and REFILL
See Service Instructions, page 4

Water Pump .... **WB** **6**

Generator (oil hole) .... Sparingly **MO** **6**

Air Cleaner Elements .... Service
Wire gauze .... Wash and oil **MO** **6**

Carburetor Dashpots .... 20 **MO** ★
Unscrew caps, fill only to level of inner hollow shaft

Battery .... Test and fill ★

Front Wheel Bearings (fittings) .... **WB** ★
Models before 1957 Serial No. TS13046, fittings under hub caps
Remove bearings and repack .... **WB** **6**
TR4 .... Repack **WB** **24**
Every 12,000 miles, if car is used in competition driving

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

Adjust the brakes as follows:
TR2 and TR3 with Lockheed drum brakes (up to commission No. TS 1300)
Front brakes have two adjusters each. Rear brakes have one adjuster each

1. Remove road wheels to expose adjustment opening provided in each drum
2. Turn drum until each slotted head adjuster aligns with adjustment opening
3. Using a screw driver, turn each adjuster until a slight drag is felt when revolving drum
4. Back off each adjuster one notch

TR3, TR3-A, -B, TR4 with Girling disc brakes on front and drum brakes on rear (commission No. TS 1300 and later). Front disc brakes are self-adjusting, replace pads when ⅛" thick. Rear drum brakes, adjust as follows:
A single cam adjuster is located on each backing plate above the axle tube

1. Turn each adjuster clockwise until drum cannot be turned by hand
2. Back off each adjuster one notch. Drum should rotate freely without drag

Bleeding sequence: RR, LR, RF, LF

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

★ Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
24 Every 24,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant
GL4 Multipurpose-Type Gear Lubricant API Service GL4
HB Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP Hypoid Gear Lubricant
MO Motor Oil
MP Multi-Purpose Gear Lubricant
SA Shock Absorber Fluid, Light
WB Wheel Bearing Grease

VOLKSWAGEN

1953-65 All 1200 Models
Except Truck and Station Wagon
Includes Karmann-Ghia

Sedan

Karmann-Ghia

HOOD RELEASE: Rear lid handle, sedan; inside, Karmann-Ghia

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	19L (6-volt)	77

COMPRESSION PRESSURE

(at cranking speed, throttle open, eng. hot)

	psi
25-hp engine	85-105
36-hp engine	100-120
40-hp engine	100-128

SPARK PLUGS

Beru 175/14; Bosch W175T1; Champion L-87Y preferred (L-85 may be used)
Gap: .024"-.028"
Torque: 22-29 ft. lb.

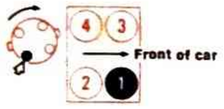
IGNITION POINTS

Bosch or VW
Gap: .016"
Dwell angle: Bosch distributor, 51°-55°; VW distributor, 48°-52°

CONDENSER

Bosch
Capacity: .25-.30 mfd

Cylinder Numbering Sequence



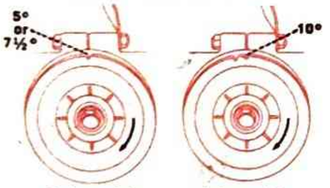
Firing Order: 1, 4, 3, 2

TIMING PROCEDURE

1. Connect 6-volt test lamp to distributor primary terminal and to ground
2. Turn pulley until notch is aligned with split in crankcase
3. Turn distributor housing until points just break, as indicated by the test lamp

Note: Due to nonsymmetrical distributor cam, 1965 models must be timed with No. 1 cylinder firing

Timing Mark and Setting



Early models **Late models**

Timing Setting (Before Top Dead Center):
Timing must be set with engine cold
1953, 5°; 1954-60, 7½°; 1961-65, 10°
Notch aligned with split in crankcase
When pulley has two notches, use right notch

FUEL PUMP

Solex or Pierburg
Pressure: 1953-60, 1.3-1.85 lb. at 1000-3000 rpm; 1961-65, 2½ lb. at 3000 rpm
Volume: 1953-60, 5½ ounces; 1961-63 early, 9 ounces; 1963 late -65, 13½ ounces, in 1 minute at 3000 rpm

CARBURETOR ADJUSTMENT

SOLEX	Idle Mixture (initial turns)	Choke (notches)
25-, 36-hp engines 1-bbl. 28PCI	1¼-1½	manual
40-hp engine 1-bbl. 28PICT	1¼-1½	Index*

* During warm season, above +68°, air control damper should be locked "open"

ENGINE IDLE SPEED

500-550 rpm

VALVE CLEARANCES

(engine cold, approx. +68°, not running)
40-hp engine: Intake .008"; exhaust .012"
Others: Intake .004"; exhaust .004"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

3 Steering Gear (plug)................90 **MP**
Reach behind cover plate under front hood

☆ Front Suspension and Steering Linkage.....(8 or 12 fittings) **LM**
CL may be used

☆ Pedal Shaft (inside car)................**LM**
CL may be used
On early models only

LUBRICATION PRECAUTIONS

Lift car to remove weight from front wheels when lubricating front axle assembly

F Clutch Cable Ball Joint.............Coat **LM**
CL may be used

3 Brake Cables 1953-61.........Sparingly **LM**
CL may be used

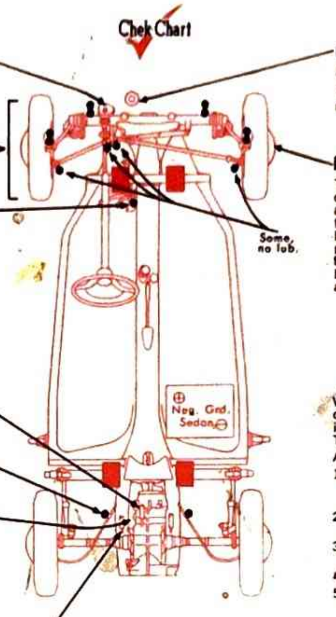
TRANSAXLE ....**MP**
Above +14°, 90°; consistently below +14°, 80
1953-60, plug on right side
3 Maintain level to fill plug hole
CAPACITY 1961-65, 5¼ pints; all other models, 4¼ pints
DRAIN and REFILL
15 1953-60
30 1961-65
Drain thru both plugs; clean magnetic drain plugs
Fill slowly, allow 2 to 3 minutes for oil level to stabilize. Recheck level before replacing fill plug

F Heater Cable Both sides...........Coat **LM**
CL may be used

GAS TANK ....Gallons
All models 10½

TIRES........Pressure	Front	Rear
5.60-15	16, 17*	20, 24*

* Depending on number of occupants



Brake Master Cylinder (cap).............**HB** 3
Fill reservoir ¾ full
1953, remove left wheel to reach; all other models, remove spare tire to reach

Front Wheel Bearings.............Repack **LM** 30
Tighten adjusting nut until bearings drag slightly, or to 29 ft. lb. of torque, spin wheel. Loosen nut approximately 72°, which is the angle between two wheel bolt holes, until thrust washer can just be moved sidewise with screw driver. Install lock plate and nut lock, tighten nut lock and recheck to be sure of sidewise movement of thrust washer. Bend one tab on lock plate over adjusting nut and other tab over nut lock

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated
Two adjusters are provided in each brake
Adjust the brakes as follows:

1. Raise car, remove hub caps, apply pedal firmly a few times, turn wheel until one adjuster is visible behind hole in drum
2. Turn each adjuster until the shoe makes light contact with the drum
3. Back off each adjuster 3-4 teeth until drum revolves freely without drag
4. Repeat procedure at each wheel
5. Depress pedal firmly a few times and recheck the adjustments

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

☆ Every 3,000 miles
Adverse conditions: Every 1,500 miles
3 Every 3,000 miles
15 Every 15,000 miles
30 Every 30,000 miles
F Every fall

CRANKCASE..............		"MS" MO
Above +90°................	30	10W-30
Above +32°................	20,20W	10W-30
Above −10°................	10W	10W-30
Below −10°................	5W	5W-20

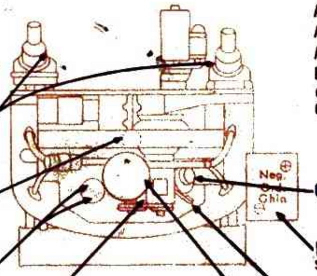
CAPACITY 2½ quarts
DRAIN and REFILL Clean magnetic drain plug
See Service Instructions, page 4

F Heater Linkage ....Coat **GG**

3 Oil Strainer..............Remove and clean
To reach, remove plate, bottom of cra[illegible]
Reinstall with new gasket

Distributor
3 Wick under rotor.........One drop oil **MO**
Some 1961 with Volkswagen distributor
3 Felt on plate............One drop oil **MO**
1961-65 with Bosch distributor

3 Carburetor Linkage ....**MO**



Oil Fill Cap

Battery Karmann-Ghia ....Test and fill 3
Sedan and convertible models under rear seat

Crankcase Dipstick..............Check level

Air Cleaner Element................Service
Oil bath..............Wash and fill 20 **MO** 3

🟥 Position for lift adapter
● Lubrication fitting

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant
GG Graphite Grease
HB Hydraulic Brake Fluid, Heavy-Duty
LM Lithium Grease
MO Motor Oil
MP Multi-Purpose Gear Lubricant

VOLVO

1957-65 PV444, -445; P210, PV544

PV444, -544

PV445, P210

HOOD RELEASE: Inside

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs
B18 engine	24	60
All others	19	84

COMPRESSION PRESSURE (at cranking speed with throttle open)	psi
60 bhp B16A engine	135-150
70 bhp B14A engine	142-156
85 bhp B16B engine	142-156
90 bhp B18D engine	170-200

SPARK PLUGS

B18D engine: Bosch W175T1; Champion L-7
Others: Bosch W175T3; Champion J-6*
Gap: .028"
Torque: 14 mm plug; with copper gasket, 25 ft. lb.; with steel gasket, 29 ft. lb.; 10 mm plug, 11 ft. lb
* Early 70 bhp engine, 10 mm Y-4-A

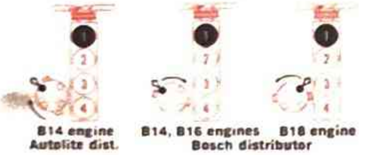
IGNITION POINTS

Autolite and Bosch
Gap: Autolite .018"-.022"; Bosch .016"-.020"
Dwell angle: Autolite 47°; Bosch: B18 engine, 60°-63°, others, 47°-53°

CONDENSER

Autolite and Bosch
Capacity: Autolite .20-.25 mfd; Bosch .20-.25 mfd

Cylinder Numbering Sequence



B14 engine Autolite dist. — B14, B16 engines — B18 engine Bosch distributor

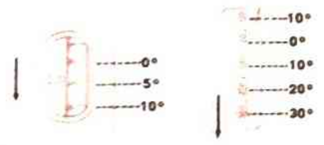
Firing Order: 1, 3, 4, 2

TIMING PROCEDURE

1. Connect tachometer
2. Connect timing light to No. 1 spark plug or distributor cap tower
3. Disconnect distributor vacuum line
4. Set engine speed to 1500 rpm
5. Observe timing marks at flywheel opening and turn distributor to obtain recommended setting as follows:
   B14A engine, 20°
   B16A engine, 21°
   B16B engine, 21°-23°
   B18D engine, 22°-24°
6. Reconnect vacuum line and reset idle to proper idle speed

Note: B18D engine requires 97 octane (min.) or ignition must be retarded

Timing Mark and Setting



B14, B16 engines — B18 engine

Timing Setting (Before Top Dead Center):
B14A engine, 2° static*
B16A engine, 4° static*
B16B engine, 6° static*
B18 engine, 5° static*
* Engine should be timed at 1500 rpm. See Timing Procedure Section

FUEL PUMP

AC type UG
Pressure: B18 engine, 1½-2½ lb.; others, 2-3½ lb., all at idle rpm
Volume: 16 ounces in 1 minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
S.U.	
Twin 1-bbl, H-2	1
Twin 1-bbl, H-4	1
Twin 1-bbl, HS-6	1½
ZENITH	
1-bbl 34VN	1-2

ENGINE IDLE SPEED

B16A engine 450-550 rpm
Others 500-700 rpm

VALVE CLEARANCES

(engine hot)
B16A engine Intake .016", exhaust .018"
B18D engine Intake .016"-.018", exhaust .016"-.018"
Others Intake .020", exhaust .020"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM	Quarts With Heater
All models	9

Cooling system pressure, 4 pounds

6 Water Pump . . . . . Sparingly **LM**
B18 engine, no lubrication

3 Steering Gear (plug) . . . . . 90 **MP**

3 Fuel Pump Sediment Bowl and Screen . . . Clean
B14, B16 engines, clean screens in S.U. carb. float bowl unions

12 PCV System Valve . . . . . Replace
Also clean hose and oil trap

12 Oil Fill Cap . . . . . Wash and oil **MO**

Crankcase Dipstick . . . . . Check level

★ Distributor Shaft (oil cup) . . . . . **MO**
★ Wick under rotor . . . . . Sparingly **MO**

3 Brake Master Cylinder (cap) . . . . . **HB**
Late models, ¾ inch below top of reservoir; early models, ½ inch below top of fill hole

★ Steering Linkage and Front Suspension . . . . (12 or 18 fittings) **CL**

Y Steering linkage joints without fittings . . **CL**
Fill cavity between ball joint and rubber cover using flat nozzle grease gun adapter. Fold up rubber cover
Late models with lock clip around rubber cover, no service

3 Pedal Shaft . . . . . **CL**

3 Clutch Shaft . . . . . **CL**

TRANSMISSION . . . . 30 MO, GL, MP

Above +32°, 90; below +32°, 80
★ Maintain level to fill plug hole
CAPACITY 3-speed, 1 pint; late models with synchronized 1st speed, 1½ pints; late 4-speed, 1½ pints; early 4-speed, 2 pints
24 **DRAIN and REFILL**

3 Universal Joints . . . . . **CL**
Some, no lubrication

3 Universal Joint Spline . . . . . **LM**

C Hand Brake Cable Guides . . . . Coat sparingly **GG**

3 Universal Joint . . . . . **CL**
Some, no lubrication

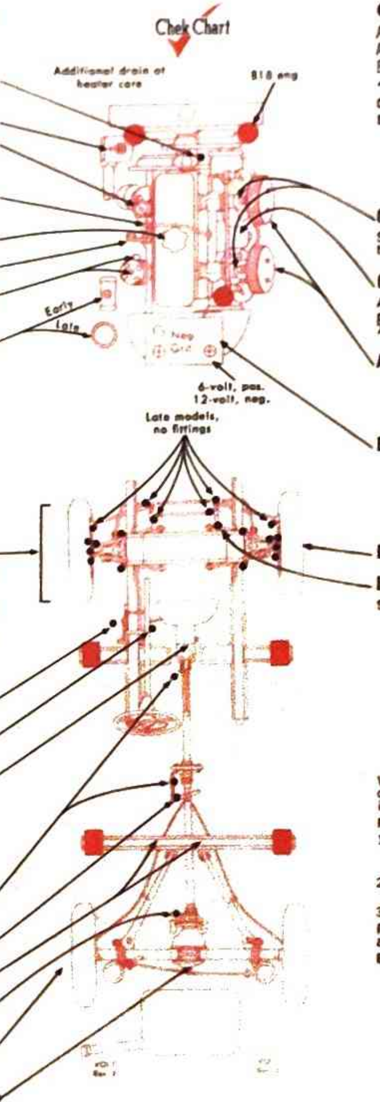
18 Rear Wheel Bearings . . . . . Repack **LM**
Necessary to remove axle shafts

DIFFERENTIAL . . . . . MP

Above +32°, 90; below +32°, 80
★ Maintain level to fill plug hole
CAPACITY 2¾ pints
24 **DRAIN and REFILL**

GAS TANK	Gallons
All models	9¼

TIRES Pressure	Front	Rear
5.90-15, PV444, PV544	20	23
6.40-15, PV44, P210	20	23
With heavy load	20	28



CRANKCASE		"MS" MO
Above +90°	30	10W-30*
Above +32°	20,20W	10W-30*
Below +32°	10W	10W-30*

* 10W-30 is preferred
CAPACITY B18 engine, 3½ quarts; others, 3 quarts
DRAIN and REFILL
See Service Instructions, page 4

Carburetor Dashpots . . . . . 20 **MO** 3
S.U. carburetors only. Unscrew caps, fill only to top of inner hollow shafts

Oil Filter . . . . . Replace 6
Add extra quart oil; except B18 engine, add extra pint oil
70-bhp models, at left front

Air Cleaner Elements . . . . . Service
Dry type . . . . . Replace 12
Wire gauze . . . . . Wash and oil **MO** 3

Battery . . . . . Test and fill ★

Front Wheel Bearings . . . . . Repack **LM** 24

Idler Arm . . . . . **CL** ★
Some models, no lubrication

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2", the need for service is indicated

P210, PV544: Adjust the brakes as follows:

1. Use a suitable tool inserted into adjustment opening in backing plate to expand shoes until drum cannot be turned by hand
2. Back off adjuster screw 8 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

PV444, -445 self-adjusting brakes are used. No adjustment normally required

Bleeding sequence: LF, RF, LR, RR

🟥 Position for lift adapter
● Lubrication fitting
● Cooling system drain

KEY TO INTERVALS

★ Every 1,500 miles
3 Every 3,000 miles
6 Every 6,000 miles
12 Every 12,000 miles
18 Every 18,000 miles
24 Every 24,000 miles
Y Every year
C Conditional service
Coat hand brake cable guides as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant LM may be used
GG	Graphite Grease
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease Containing molybdenum disulfide
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant

IMPORTED CARS

Alfa Romeo thru Fiat

ALFA ROMEO

AUSTIN HEALEY SPRITE

DKW-750

BMW

CITROEN

DATSUN

ALFA ROMEO

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1956-63 Giulietta 1300 series	6¼①	MO For Service **MS** All temperatures, 20W-40
1960-63 2000 Roadster	7½①	
1963-65 Giulia 1600 series	6¾①	
2600 series	8¼①	
MANUAL TRANSMISSION	**PINTS**	
1956-63 Giulietta 1300 series Spider, Sprint	2⅞	All temperatures, **GL** 90
Sprint Veloce, Super Spider	3	
1960-63 2000 Roadster	3½	
1963-65 Giulia 1600 series	3¾	
2600 series	3¾	
DIFFERENTIAL	**PINTS**	
1956-63 Giulietta 1300 series	3	All temperatures, **EP** 90
1960-63 2000 Roadster	6	
1963-65 Giulia 1600 series	3	
2600 series	4⅞	

①Includes filter.

AUSTIN

MODEL	CAPACITY		LUBRICANT
CRANKCASE	**QUARTS**		
1956 A-30 "Seven"	3½		**MO** For Service **MS** Above +90° 40 20W-30 Above +32° 30 20W-30 Above +10° 20,20W 20W-30 Below +10° 10W ...
A-90	6½		
1957-59 A-35	4½		
A-95, A-105	7½		
1956 A-40, A-50	4¼		Above +32° 30 20W-30 Above +10° 20,20W 20W-30 Below +10° 10W ...
1957-59 A-55	4¼		
1959-62 A-55 Mark II	4½①		
A-40 series A2S6	4½		
1960-65 Mini, Mini Cooper	5②		
1962-64 A-60	4½①		
AUTOMATIC TRANSMISSION	**QUARTS** Initial Refill	Total Refill	
1962-64 A-60	5⅜	6⅝	All temperatures, **AF**
MANUAL TRANSMISSION	**PINTS** Manual	O'drive	
1956 A-30 "Seven"	2¾	—	All ex. Mini, Mini Cooper, **MO** 30
A-90	5½	—	
1957-59 A-35	3	—	
A-55	5⅜	6⅞	
A-95, A-105	5	6¼	
1959-62 A-40 series A2S6	2⅜	—	
A-55 Mark II	5⅝	—	
1960-65 Mini, Mini Cooper	②	—	
1962-64 A-60	5⅝	—	
DIFFERENTIAL	**PINTS**		
1956 A-30 "Seven"	1¾		**MP** A-35, A-90, A-95, A-105 Above +32° 90 Below +32° 80 All others ex. Mini, Mini Cooper Above +10° 90 Below +10° 80
A-90	3½		
1957-59 A-35	2¼		
A-55	2½		
A-95, A-105	3½		
1959-62 A-40 series A2S6	2		
A-55 Mark II	2¾		
1960-65 Mini, Mini Cooper	②		
1962-64 A-60	2¾		

①Includes oil filter.
②Crankcase, transmission and differential combined. Capacity includes filter.

AUSTIN HEALEY

MODEL	CAPACITY		LUBRICANT
CRANKCASE	**QUARTS**		
1956 100 4-cyl.	7¼		**MO** For Service **MS** Above +32° 30 20W-30 Above +10° 20,20W 20W-30 Below +10° 10W ...
1957-59 100 Six	7		
1958-65 Sprite Mark I, II, III	4①		
1960-65 3000 Mark I, II, II, III Convertible	7		
MANUAL TRANSMISSION	**PINTS** Manual	O'drive	
1956 100 4-cyl.	6	7½	All temperatures, **MO** 30
1957-62 100 Six, 3000 Mark I, II	6	7½	
1958-65 Sprite Mark I, II, III	2¾	—	
1963-65 3000 Mark II, III Convert.	6⅞	8⅝	
DIFFERENTIAL	**PINTS**		
1956-65 All ex. Sprite	3⅝		**MP** Above +10° 90 Below +10° 80
1958-65 Sprite Mark I, II, III	1¾		

①Includes oil filter.

AUTO UNION-DKW

MODEL	CAPACITY	LUBRICANT
ENGINE	**QUARTS**	
1956-57 Big DKW 3=6	①	WITHOUT RESERVOIR **MS** or **DG** When refueling, pour ½ quart oil in tank, then add 5 gallons of gasoline Above +32°, 30; below +32°, 20,20W WITH RESERVOIR **MS-DG** or **TO** All temperatures, 10W-30. Capacity, 4 quarts
1957-63 AU-1000, -1000S, -1000Sp.	①	
1960-64 DKW-750, DKW Junior DeLuxe	①	
TRANSAXLE	**PINTS**	
1956-57 DKW 3=6	5¼	**GL** 90 All ex. DKW-750, DKW Junior DeLuxe may use 80
1957-63 AU-1000, -1000S, -1000Sp.	5¼	
1960-64 DKW-750, DKW Junior DeLuxe	3¾	

①Two-cycle engine, oil mixed with gasoline.

BMW

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1958-65 600, 700	2⅛	**MO** For Service **MS** 10W-30 or **HD** 30
1962-65 1500, 1800, 1800TI	4½	
MANUAL TRANSMISSION	**PINTS**	
1962-65 1500, 1800, 1800 TI	2½	All temperatures, **MP** 80
TRANSAXLE	**PINTS**	
1958-65 600, 700	2½	600, **MO** For Service **MS** 20 700, **MO** 40, **GL** 80
DIFFERENTIAL	**PINTS**	
1957-65 2.6, 3.2	2¾	All temperatures, **HP** 90
1960-65 3.2 Super	3½	
1962-65 1500, 1800, 1800 TI	2	

CITROEN

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1956-58 2CV	2	All temperatures, **MO** 20
1956-65 DS19, ID19	4	**MO** For Service **MS** or **DG** Above +86° 30 20W-40 Above 0° 20① 10W-30① Below 0° 5W-20
1963-65 AMI-6	2	
TRANSAXLE	**PINTS**	
1955-58 2CV	2	**EP** 2CV, all temperatures, 80 DS19, ID19, all temperatures, 90
1956-65 DS19, ID19	4	
1963-65 AMI-6	2	All temperatures, **EP** 80

①AMI-6, SAE 5W-20 below +10°.

DATSUN

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1961-65 Bluebird (P410-U)	3¼	**MO** For Service **MS** or **DG** Above +90° 30 Above +10° 20,20W Below +10° 10W
MANUAL TRANSMISSION	**PINTS**	
1961-65 Bluebird (P410-U)	4	**MP** Above +90° 140 Above +10° 90 Below +10° 80
DIFFERENTIAL	**PINTS**	
1961-65 Bluebird (P410-U)	2	**MP** Above +90° 140 Above +10° 90 Below +10° 80

FIAT

MODEL	CAPACITY		LUBRICANT
CRANKCASE	**QUARTS**		
1957-61 600, 600 Multipla	3⅛		**MO** For Service **MS**① Above +90° 40 20W-40 Above +32° 30 10W-30 Above +10° 20 10W-30 Below +10° 10W 10W-30
500, 500 Bianchina	1⅞		
1957-65 1100, 1200 series	3⅛		
1959-65 1500 Cabriolet	4½		
1800, 1800B, 2100, 2300	4¼		
1962-65 600D	3⅛		
1964-65 1500 Spider	3¾		
MANUAL TRANSMISSION	**PINTS** Manual	O'drive	
1957-65 1100, 1200 series	2⅜	—	1100, 1200, 1500 Cabriolet, 1500 Spider, **GL** or **EP** 90 All others, **EP** 90
1959-65 1500 Cabriolet	2⅜	—	
1800, 1800B, 2100, 2300	3¾	5½	
1964-65 1500 Spider	2⅜		

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
EP	Extreme Pressure Gear Lubricant
GL	Straight Mineral Gear Lubricant
HD	Heavy-Duty Motor Oil
HP	Hypoid Gear Lubricant
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
TO	Auto Union-DKW Two-Cycle Engine Lubricant

IMPORTED CARS

Ford thru Mercedes-Benz

FIAT Continued

TRANSAXLE

MODEL	CAPACITY PINTS	LUBRICANT
1957-61 500, 500 Bianchina	2⅜	All temperatures, EP 90
600, 600 Multipla	3¼	
1962-65 600D	3¼	

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
1957-65 1100, 1200 series	1¼	All temperatures, EP 90
1959-65 1500 Cabriolet	1¼	
1800, 1800B, 2100, 2300	2½	
1964-65 1500 Spider	1⅞	

①MM may be used under favorable conditions.

FORD

CRANKCASE

MODEL	CAPACITY QUARTS	LUBRICANT
1956-61 Consul	3½	MO For Service MS Above +32° 20,20W Above −10° 10W Below −10° 5W
Zephyr, Zodiac	4¼①	
1963-65 Zephyr 6, Zodiac	4¼	
1956-59 Anglia, Prefect	2	Above +90° 30 Above +32° 20,20W Above −10° 10W Below −10° 5W
1956-60 Escort, Squire	2	
1958-60 Taunus 17M	2¾	Above +14° 20,20W Below +14° 10W
1960-65 Anglia, Prefect	2¾	Above +32° 20,20W Above −10° 10W Below −10° 5W
1962-65 Consul 315, Capri	2¾	
1963-65 Consul Cortina	2¾②	

AUTOMATIC TRANSMISSION

MODEL	QUARTS Initial Refill	QUARTS Total Refill	LUBRICANT
1956-61 Zephyr, Zodiac	6	8½	All temperatures, AF
1963-65 Zephyr 6, Zodiac	6	7½	
1965 Cortina	5¼	6¾	

MANUAL TRANSMISSION

MODEL	PINTS Manual	PINTS O'drive	LUBRICANT
1956-60 Anglia, Prefect, Escort, Squire (100E)	2	—	All temperatures, EP 80
1956-61 Consul, Zephyr, Zodiac	3	3½	
1958-60 Taunus 17M 3-speed	3¼	4¾	
4-speed	3	—	
1960-65 Anglia (105E), (106E)	2⅛	—	
1962-65 Consul 315, Cortina, Capri	2⅛	—	
1963-65 Zephyr 6, Zodiac	4¾	5¼	

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
1956-60 Anglia, Prefect, Escort, Squire (100E)	1¾	Anglia ex. (105E); Prefect, Escort, Squire, EP 90 Anglia (105E), Consul, Zephyr, Zodiac HP Above −10° 90 Below −10° 80 Taunus 17M, HP 90
1956-61 Consul, Zephyr, Zodiac	3	
1958-60 Taunus 17M 3-, 4-speed	2¼	
1960-65 Anglia (105E), (106E)	2⅛	
1962-65 Consul 315, Cortina, Capri	2⅜	
1963-65 Zephyr 6, Zodiac	2	

①1956, 4 quarts. ②1500 c.c. engine, 4 quarts.

HILLMAN

CRANKCASE

MODEL	CAPACITY QUARTS	LUBRICANT
1956 Minx Mark IV thru VIIIA; Husky	4¼①	MO For Service MS Above +90° 40 20W-40 Above +45° 30 10W-30 Above +10° 20,20W 10W-30 Above −10° 10W 10W-30 Below −10° ... 5W-20
1957-65 Husky series I	3¾	Above +70° 30④ 20W-40 Above +20° 20,20W 10W-30 Above +5° 10W 10W-30 Below +5° ... 5W-20
Minx I, II, III, III-A, -B, -C, V; Husky series II, III	4¼①	
1962-65 Super Minx Mark I, II, III	4¼①	

AUTOMATIC TRANSMISSION

MODEL	CAPACITY QUARTS	LUBRICANT
1960-63 Easidrive	②	MO Above 0° 10W-30 Below 0° 5W-20
1963-65 Borg Warner	6½	All temperatures, AF

MANUAL TRANSMISSION

MODEL	CAPACITY PINTS	LUBRICANT
1956 Minx Mark IV thru VIII; Husky	2½	MO Above −10° 30 Below −10° 20,20W
Minx Mark VIII Deluxe, VIII-A	2¾	
1957-65 Minx I, II, III, III-A, -B, -C, V; Super Minx Mark I, II, III; Husky series I, II, III	3⅜	

HILLMAN Continued

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
1956-65 All	2	EP Above −10° 90③ Below −10° 80

①Includes filter.
②3¼ pints.
③Spiral bevel, SAE 140 above +32°.
④SAE 20W-40 or 40 for continuous high speed driving, particularly in hot weather.

JAGUAR

CRANKCASE

MODEL	CAPACITY QUARTS	LUBRICANT
1956-62 Mark VII, VIII, IX	11½①	MO For Service MS Above +90° 40 10W-30 Above +32° 30 10W-30 Below +32° 20 10W-30
1956-57 XK-140	11½①	
1956-65 2.4, 3.4, 3.8 Liter	6½①	
1958-61 XK-150, XK-150S	7¾①	
1962-65 "E" Type	9①	
Mark X, 3.8 "S"	7¼①	

AUTOMATIC TRANSMISSION

MODEL	QUARTS Initial Refill	QUARTS Total Refill	LUBRICANT
1956-65 All	6	9	All temperatures, AF

MANUAL TRANSMISSION

MODEL	PINTS Manual	PINTS O'drive	LUBRICANT
1956-65 All ex. 4.2 Litre "E"	3	4¾	All temperatures, MO 30
1965 4.2 Litre "E" Type	3	—	All temperatures HP 90

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
1956-62 Mark VII, VIII, IX	4½	HP 90 Powr-Lok, HP★ must be used
1956-61 XK-140, -150, -150S	4¼	
1956-65 2.4, 3.4, 3.8 Liter, "E" Type	3¼②	
1962-65 Mark X, 3.8 "S"	3¼	

①Includes filter. ②Early 2.4 Liter, 2¾ pints.

LANCIA

CRANKCASE

MODEL	CAPACITY QUARTS	LUBRICANT
1958-59 Aurelia	5¼	MO For Service MS 10W-30①
1958-65 Flaminia	6½	
1959-62 Appia, 2nd and 3rd series	4	
1962-65 Flavia	6	

MANUAL TRANSMISSION

MODEL	CAPACITY PINTS	LUBRICANT
1958-59 Aurelia	9½②	All temperatures, MP 90
1958-65 Flaminia	8¾②	
1959-62 Appia, 2nd and 3rd series	3	
1962-65 Flavia	4②	

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
1958-65 Aurelia, Flaminia, Flavia	②	1959-62 Appia, 2nd and 3rd series, MP 140
1959-62 Appia, 2nd and 3rd series	3½	

①DG may be used for Appia, 2nd and 3rd series.
②Differential combined with transmission.

MERCEDES-BENZ 1956-65

CRANKCASE

MODEL	CAPACITY QUARTS	LUBRICANT
180, 190 series	4¼	DM-DG, diesel engine MS-DG, gasoline engine Above +90° 30 Above +32° 20,20W① Above −10° 10W① Below −10° 5W①
219, 220S, 220SE	6¼	
220b, 220Sb, 220SEb, 230SL	5¾	
300b, 300c, 300d, 300S	7	
300Sc, 300SL	②	
300SE	6⅝	

AUTOMATIC TRANSMISSION

MODEL	QUARTS Initial Refill	QUARTS Total Refill	LUBRICANT
190c, 220b, 220Sb, 220SEb, 230SL	3	4	All temperatures, AF
300c, 300d	5	9½	
300SE	3	5¾	

MANUAL TRANSMISSION

MODEL	CAPACITY PINTS	LUBRICANT
All	3	All temperatures, AF

DIFFERENTIAL

MODEL	CAPACITY PINTS	LUBRICANT
180a, 180b, 180D, 180Db, 219, 220S, 220SE; 190 series ex. 190c, 190Dc	4¾	All temperatures, MP 90
190c, 190Dc, 220b, 220Sb, 220SEb, 230SL	5¼	
300b, 300c, 300Sc	6½	All temperatures, HP 90
300d, 300SL Roadster	4¾	
300S	6¾	
300SE	5¼	
300SL coupe	5	

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
EP	Extreme Pressure Gear Lubricant
HP	Hypoid Gear Lubricant
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant

Where the following symbols appear in chart recommendations, manufacturer specifies:
★Special lubricant for non-slip differentials

FIAT 1100

FORD ANGLIA

HILLMAN MINX

JAGUAR XK-150

LANCIA

MERCEDES-BENZ 190SL

IMPORTED CARS

Metropolitan thru Renault

METROPOLITAN

MGA

MORRIS MINOR

NSU SPORT PRINZ

OPEL

PEUGEOT 403

PORSCHE

RENAULT DAUPHINE

MERCEDES-BENZ 1956-65 Continued

①All except 190c, -Dc, 220b, -Sb, -SEb, 230SL, 300SE after 31,000 miles, use one grade heavier except 300 series, SAE 20,20W below +32°; 300SE, SAE 10W below −10°. 190c, -Dc, 220b, -Sb, -SEb, 230SL, 300SE may also use SAE 10W-30 from +90° to −10°; SAE 5W-20 below −10°.

②Capacity of oil tank: 300Sc, 10¼ quarts; 300SL coupe, normal driving, 11½ quarts; racing, 16 quarts, except Roadster, 14¾ quarts.

METROPOLITAN

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **MM, MS**
1956-62 1500 series	4	Above +32° 30① 10W-30 Above +10° 20,20W 10W-30 Normally below +10° 10W 10W-30
MANUAL TRANSMISSION	**PINTS**	**MO**
1956-62 1500 series	5½	Above 0° 30 Below 0° 20,20W
DIFFERENTIAL	**PINTS**	
1956-57 1500 series	2	**MP** Above +10° 90 Below +10° 80
1958-62 1500 series	2¼	

①For high speeds in hot weather, SAE 40.

M.G.

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1956-59 Magnette ZA, ZB	4¾①	**MO** For Service **MS** Above +32° 30 20W-30 Above +10° 20,20W 20W-30 Below +10° 10W . . .
1956-61 MGA 1500, 1600	4	
1958-61 MGA Twin Cam	7½	
1959-62 Magnette Mark III	4½①	
1961-62 MGA 1600 Mark II	4	
1961-65 Midget Mark I, II	4①	
1963-65 MGB	4	
MG Sports Sedan	5⅛①	
MANUAL TRANSMISSION	**PINTS**	
1956-59 Magnette ZA, ZB	5½	All temperatures, **MO** 30
1956-62 MGA 1500, 1600, 1600 Mark II, Twin Cam	5⅜	
1959-62 Magnette Mark III	5⅜	
1961-65 Midget Mark I, II	2¾	
1963-65 MGB	5⅝②	
MG Sports Sedan	③	
DIFFERENTIAL	**PINTS**	
1956-59 Magnette ZA, ZB	3	**MP** Above +10° 90 Below +10° 80
1956-62 MGA 1500, 1600, 1600 Mark II, Twin Cam	2¾	
1959-62 Magnette Mark III	2¾	
1961-65 Midget Mark I, II	1¾	
1963-65 MGB	2¾	
MG Sports Sedan	③	

①Includes oil filter.
②With overdrive, 6 pints.
③Combined with crankcase.

MORRIS

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	
1956 Minor II	4①	**MO** For Service **MS** Above +32° 30 20W-30 Above +10° 20,20W 20W-30 Below +10° 10W . . .
Oxford series II, Cowley	4¼①	
1956-59 Isis	7	
1957-59 Oxford series III	4½①	
1957-63 Minor 1000	4¼①	
1960-62 Oxford Mark V	4½①	
1960-62 Mini, Mini Cooper	5②	
MANUAL TRANSMISSION	**PINTS**	
1956 Minor II	2¾	All temperatures, **MO** 30
1956-59 Oxford series II, III, Cowley, Isis	5½	
1957-63 Minor 1000	3	
1960-62 Oxford Mark V	5⅜	
1960-62 Mini, Mini Cooper	②	
DIFFERENTIAL	**PINTS**	
1956 Minor II	1¾	**MP** Above +10° 90 Below +10° 80
1956-59 Oxford series II, III, Cowley	3¼	
Isis	4½	
1957-63 Minor 1000	2	
1960-62 Oxford Mark V	2½	
1960-62 Mini, Mini Cooper	②	

①Includes filter. ②Crankcase, transmission and differential combined.

NSU

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **MS, DG**②
1958-61 Prinz, Prinz 30, Sport Prinz	3①	Above +90° 30 10W-30 Above +32° 20 10W-30 Below +32° 10W 10W-30
1962-65 Prinz 4, Sport Prinz	3①	
1964-65 Prinz 1000L	3	All temperatures, 20W-20, 10W-30
MANUAL TRANSMISSION	**PINTS**	
1958-65 All ex. Prinz 1000L	①	All temperatures, **MP** 80
1964-65 Prinz 1000L	3	
DIFFERENTIAL	**PINTS**	
1958-65 All ex. Prinz 1000L	①	
1964-65 Prinz 1000L	③	

①Crankcase, transmission and differential combined.
②DG for Sport Prinz, Prinz 30 and 1962 Prinz 4.
③Transmission and differential combined.

OPEL

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **ML** or **MM**
1958-63 All ex. Kadett	3	Above 0° 20 Below 0° 10W
1963-65 Kadett	2⅝	**MS** Above +32° 20,20W 10W-30 Above 0° 10W 5W-20 Below 0° 5W 5W-20
MANUAL TRANSMISSION	**PINTS**	
1958-63 All ex. Kadett	2	All temperatures, **MP** 80
1963-65 Kadett	1¼	All temperatures, **MP** 90①
DIFFERENTIAL	**PINTS**	
1958-63 All ex. Kadett	2	All temperatures, **MP** 90
1963-65 Kadett	1	

①MO SAE 40 or 50 may be used.

PEUGEOT

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **MS**
1959-65 403	4¼①	Above +90° 40 20W-40 Above +32° 40,30 20W-40 Above +10° 30,20W 20W-40, 10W-30 Below +10° 10W 10W-30
1961-65 404	4¼①	
MANUAL TRANSMISSION	**PINTS**	**MO** 30 or 40 Above +60°, **EP** or **MP**, 90 may be used
1959-60 403	3¼	
1961-65 403, 404	3	
DIFFERENTIAL	**PINTS**	
1959-65 403 sedan	3	All temperatures, **EP** or **MP** 90
station wagon	3⅝	
1961-65 404	3½	

①Includes filter.

PORSCHE

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **MS**
1956-65 All ex. Carrera	3⅛	Above +85° 40 Above +32° 30 Above − 5° 20 Below − 5° 10W
TRANSAXLE	**PINTS**	**HP**
1956-65 All ex. Carrera	7①	Above +32° 90 Below +32° 80

①Maintain level ½ inch below bottom edge of fill plug hole.

RENAULT

MODEL	CAPACITY	LUBRICANT
CRANKCASE	**QUARTS**	**MO** For Service **MS**
1956-61 4CV	2	Above +32° 20W 10W-30 Above +10° 10W 10W-30 Below +10° 5W-20
1956-65 Caravelle, Dauphine, Gordini	2½②	
1963-65 Caravelle, R-8	2½②	Above +10° 10W-30 Below +10° 5W-20
TRANSAXLE	**PINTS**	
1956-65 All with 3 plugs on bottom	2¼	All temperatures, **EP** 80①④
2 plugs on bottom	3③	
1963-65 Caravelle, R-8	3③	

①If SAE 80 is not available in warm weather, SAE 90 may be used temporarily.
②Without filter change, add small amount for filter drainage.
③Dauphine R.1095, Caravelle R.1133 and R-8 R.1132 with type 330 transaxle, 4 pints.
④Models with automatic shifting transmission, SAE 75 below +32°.

KEY TO LUBRICANTS

EP	Extreme Pressure Gear Lubricant
HP	Hypoid Gear Lubricant
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant

IMPORTED CARS
Saab thru Volvo

SAAB

MODEL	CAPACITY		LUBRICANT		
ENGINE	QUARTS				
1956-65 93, 93B, 93F, 95, 96, GT-750	①		Add 1 quart **TO** or **MS** 30 to each 7 or 8 gallons of gasoline. Premium gasoline is recommended for model GT-750. Below +32° dilute oil with gasoline in ratio 1-to-1 before pouring into tank		
1963-65 GT-850	3		Reservoir, **TO**		
TRANSAXLE	PINTS		**MP**		
1956-62 93, 93B, 93F, 95, 96, GT-750	4		Above +32°	90②	
1963-65 All	3		Below +32°	80	

① Two-cycle engine, pour oil in tank, then add gasoline.

② 4-speed, all temperatures, SAE 80.

SIMCA

MODEL	CAPACITY		LUBRICANT		
CRANKCASE	QUARTS				
1957-61 Aronde	5		**MO** For Service **MS**		
1957-59 Ariane 4-cyl.	5		Above +32°	30	20W-40
8-cyl.	4½		Above +10°	20W	10W-30, 20W-40
1957-60 Vedette	4½		Above −10°	10W	10W-30, 5W-20
1962-63 Simca 5	5		Below −10°	5W	5W-20
			Above +32°	30	10W-30
1962-65 1000	2¾		Above +10°	10W	10W-30
			Above −10°	10W	10W-30, 5W-20
			Below −10°	5W	5W-20
MANUAL TRANSMISSION	PINTS		**MP** or **GL4**		
1957-63 4-cyl.	2¼		Above +20°	80	
8-cyl.	3¼		Below +20°	75	
TRANSAXLE	PINTS				
1962-65 1000	4		All temperatures, **MP** 90		
DIFFERENTIAL	PINTS		**MP** or **GL4**		
1957-63 4-cyl.	2		Above +20°	90	
8-cyl. ex. Marly	2½		Above −20°	80	
Marly	3		Below −20°	75	

SUNBEAM

MODEL	CAPACITY		LUBRICANT		
CRANKCASE	QUARTS		**MO** For Service **MS**		
1956-62 Rapier, All	4¼①		Above +70°	30③	20W-40③
1959-65 Alpine series I, II, III, IV	4¼①		Above +20°	20,20W	10W-30
1964-65 IMP	3¼①		Above + 0°	10W	5W-20
			Below + 0°		5W-20
AUTOMATIC TRANSMISSION	QUARTS Initial Refill	QUARTS Total Refill			
1964-65 Alpine series IV	5⅜	6⅜	All temperatures, **AF**		
MANUAL TRANSMISSION	PINTS Manual	PINTS O'drive	**MO** For Service **MS**		
1956-62 Rapier, All	3¼	4¾	Above −10°	30④	
1959-65 Alpine series I, II, III, IV	3¼	4¾	Below −10°	20,20W④	
TRANSAXLE	PINTS		**MP**		
1964-65 IMP	5½		Above +68°	80 or 90	
			Below +68°	80	
DIFFERENTIAL	PINTS		**EP**		
1956-65 All	2		Above −10°	90②	
			Below −10°	80	

① Includes oil filter.

② Spiral bevel, SAE 140 above +32°.

③ SAE 20W-40 or 40 for continuous high speed driving, esp. in hot weather.

④ 1965 Alpine Series IV with fully synchronized transmission, SAE 10W-30.

TOYOTA

MODEL	CAPACITY		LUBRICANT	
CRANKCASE	QUARTS		**MO** For Service **MS** or **DG**	
1965 Crown	4¼		Above +90°	40
Tiara	4¼		Above +32°	30
			Below +32°	20
MANUAL TRANSMISSION	PINTS Manual	PINTS O'drive		
1965 Grown RS41	4¼	—	**GL4**	
• RS40, RS46	3¾	—	Above +50°	90
Tiara	1¾	—	Below +50°	80
DIFFERENTIAL	PINTS		**GL4**	
1965 Crown	2		Above +10°	90
Tiara	2½		Below +10°	80

TRIUMPH

MODEL	CAPACITY		LUBRICANT		
CRANKCASE	QUARTS		**MO** For Service **MS** or **DG**		
			Above +70°	40	20W-40
1956-65 TR2, TR3, TR3-A, TR3-B, TR4	6		Above +40°	30	10W-30
			Above +10°	20,20W	10W-30
			Below +10°	10W	10W-30
1958-61 TR10 sedan, Estate Wagon	4		Above +80°	30	20W-40
1960-65 Herald, Herald 1200	4		Above +30°	20,20W	10W-30
1963-65 Sport Six, Spitfire	4		Below +30°	10W	10W-30
MANUAL TRANSMISSION	PINTS Manual	PINTS O'drive			
1956-65 TR2, TR3, TR3-A, TR3-B, TR4	1¾	3¼	**HP** or **GL4** ex. Herald, Herald 1200, Sport Six, Spitfire, **GL4**		
1958-61 TR10 sedan, Estate Wagon	1¾	—	Above +30°	90	
1960-65 Herald, Herald 1200	1⅜	—	Below +30°	80	
1963-65 Sport Six, Spitfire	1⅜	2¾			
DIFFERENTIAL	PINTS				
1956-65 TR2, TR3, TR3-A, TR3-B, TR4	1¾		**HP** or **GL4** ex. Herald, Herald 1200, Sport Six, Spitfire, **GL4**		
1958-61 TR10 sedan, Estate Wagon	1¾		Above +30°	90	
1960-65 Herald, Herald 1200	1¼		Below +30°	80	
1963-65 Sport Six, Spitfire	1¼				

VAUXHALL

MODEL	CAPACITY	LUBRICANT		
CRANKCASE	QUARTS	**MO** For Service **MS**		
		Above +32°	20W	10W-30
1958-62 Victor	3½	Above 0°	10W	10W-30
		Below 0°	5W	5W-20
MANUAL TRANSMISSION	PINTS	**MP**		
		Above 0°	90	
1958-62 Victor	2½	Above −25°	80	
		Below −25°	75①	
DIFFERENTIAL	PINTS			
1958-62 Victor	3	All temperatures, **HP** 90		

① Or SAE 80 plus 10% kerosine.

VOLKSWAGEN

MODEL	CAPACITY	LUBRICANT		
CRANKCASE	QUARTS	**MO** For Service **MS**		
		Above +90°	30	10W-30
1956-65 All	2½	Above +32°	20,20W	10W-30
		Above −10°	10W	10W-30
		Below −10°	5W	5W-20
TRANSAXLE	PINTS			
1956-59 Truck, station wagon	4¼①			
1956-60 Sedan, Karmann-Ghia	4¼	**MP**		
1960-65 Truck, station wagon	5¼①	Above +14°	90	
1961-65 Sedan, Karmann-Ghia	5¼	Below +14°	80	

① Rear wheel gear cases, ½ pint each.

VOLVO

MODEL	CAPACITY		LUBRICANT		
CRANKCASE	QUARTS		**MO** For Service **MS**		
1957-62 All ex. B18 engine	3		Above +90°	10W-30③	30
1962-65 B18 engine	3½		Above +32°	10W-30③	20,20W
			Below +32°	10W-30③	10W
AUTOMATIC TRANSMISSION	QUARTS Initial Refill	QUARTS Total Refill			
1964-65 122S	5⅜	6⅜	All temperatures, **AF**		
MANUAL TRANSMISSION	PINTS Manual	PINTS O'drive	**GL** or **MP**④		
1957-62 3-speed	1½①	—	Above +32°	90④	
1958-65 4-speed	1½①	3¼②	Below +32°	80④	
			MO 30 may be used		
DIFFERENTIAL	PINTS		**MP**		
1957-65 All	2¾		Above +32°	90	
			Below +32°	80	

① Early models with 3-speed nonsynchronized 1st speed, 1 pint; early 4-speed, 2 pints.

② P-1800 with overdrive.

③ SAE 10W-30 preferred.

④ P-1800 with overdrive, SAE 30 all temperatures.

SAAB 96

SIMCA ARONDE

SUNBEAM RAPIER

TOYOTA

TRIUMPH TR3-A

VAUXHALL VICTOR

VOLKSWAGEN

VOLVO

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
EP	Extreme Pressure Gear Lubricant
GL	Straight Mineral Gear Lubricant
GL4	Multipurpose-Type Gear Lubricant API Service GL4
HP	Hypoid Gear Lubricant
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant
TO	Saab Two-Cycle Motor Oil

CHEVROLET TRUCKS

1955-59 Task-Force Series 3100-3800
1960-65 Series P20, P30

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No	Amp. Hrs.
1955-59 Task-Force	24	53
	27	72
	24T	70
1958-61 Forward Control	27	72
1962-65 Forward Control	24	53
	24	61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
6-cyl. engine	130
V-8 engine	140

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC: 1955, C44; 1956-61, C45; 1962, 6-cyl. C44, 1963-65, 6-cyl. 46N
Gap: .035" Torque: 25 ft. lb.

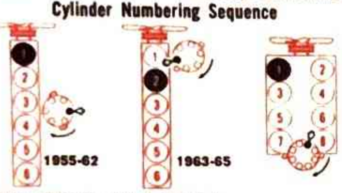
IGNITION POINTS

Delco Gap: .016" used; .019" new
Dwell angle: 6-cyl.: 1955-56, 26°-33°; 1957-62, 28°-35°; 1963-65, 31°-34°
V-8: 1955-56, 26°-33°; 1957-59, 28°-32°

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence

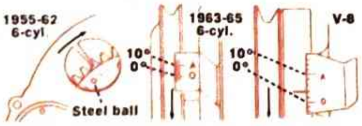


Firing Order: 6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower. On 1963-65 6-cyl., use No. 2 spark plug or cap tower and oil pan timing mark tab
4. 6-cyl. 1960-62, Set octane selector to 0°
   6-cyl. 1963-65; All V-8: Disconnect distributor vacuum line and tape manifold opening
5. 6-cyl.: Set idle speed to recommended rpm
   V-8: Set idle speed to 1000 rpm (Both engines, transmission in NEUTRAL)
6. Observe timing mark through opening in flywheel housing, crankshaft pulley or oil pan tab and turn distributor to obtain recommended setting
7. Reconnect vacuum line, reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
6-cyl.: 1955-58, 0° (Steel ball aligned with pointer); 1959-61, 5° (First short radial mark clockwise from steel ball aligned with pointer); 1962, 235 eng., 5° (First short radial mark clockwise from stamped O aligned with pointer); 261 engine, TDC (Stamped O aligned with pointer)
1963-65: 230 eng. 4° (Each line equals 2°)
V-8: 4° except 1962 348 eng., 8° (Each line is 2°)

FUEL PUMP

AC mechanical
Pressure: 6-cyl.: 3½-4½ lb.; V-8: 1955-57, 4-5 lb.; 1958-59, 5¼-6½ lb.; at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (Initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
CARTER			
1-bbl. updraft	½-1½	manual	manual
ROCHESTER			
1955-57 1-bbl. BC	2½	—	index
1955-64 1-bbl. B	1½-2½	manual	manual
1955-56 2-bbl. 2GC	1½	—	index
1955-62 2-bbl. 2G	1½	manual	manual

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

(engine hot)
6-cyl. 1955-56, intake .006"; exhaust .016"
1957-61, intake .006"*; exhaust .018"
1962 235 eng., intake .006"; exhaust .018"
261 eng., intake .006"; exhaust .020"
1963-65, hydraulic lifters, nonadjustable
V-8: Hydraulic lifters, nonadjustable
* 1958, intake .008"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts Without Heater
6-cyl. series 3100-3800	17*
8-cyl. series 3100-3800	17½*
Series P20, P30	17**

* Heavy-duty, add ½ quart
**1962, 17¾ qt.; 1963, 14 qt.; 1964-65, 13 qt.
Cooling system pressure, 7 pounds

★ **Generator** 1955-62 (1 or 2 oil cups) . . . . MO

★ **Power Steering Reservoir** . . . . AF
Fill to FULL mark on gage

C **Manifold Heat Control Valve** . . . . MH
Lubricate if shaft is not free

Air Cleaner Element . . . . Service
Oil bath . . . . Wash and fill MO
Above +32°, 50; below +32°, 20
C 1955-63, as required 6 1964-65
OC Wire gauze . . . . Wash and oil MO

★ **Steering Gear** (plug) . . . . SG

Fuel Filter Element . . . . Replace
In carburetor fuel inlet line
5 1959-61 8-cyl.
C 1962 8-cyl.; 1963-65 6-cyl. 230 engine
Replace only if carburetor flooding occurs

C **Gearshift Control Housing** CL
3-speed, 3-speed heavy-duty transmissions
Refill housing if shifting effort increases

OC **Oil Filter** . . . . Replace, add extra quart oil
1963-65 P20, P30, right side at front. Other P20, P30, left side, at front. 8-cyl., under truck

★ LUBRICATION FITTINGS (•) . . CL

Fittings shown by (O) are not found on every model
Fittings requiring different interval or lubricant are indicated by separate arrows

TRANSMISSION, Manual . . . . 90 MP, GL

80 grade may be used for extended periods of extremely low temperatures
★ Maintain level to fill plug hole

CAPACITY, pints	3-Speed	3-Speed H.D.	4-Speed
All models	2*	2¾	6¼

* 3100, 3200 with overdrive, 3 pints
DRAIN and REFILL
10 1955-63
More often for off-highway or urban service
Overdrive, drain and fill thru transmission
1964-65 Not recommended

★ **Brake Master Cylinder** (cap) (thru floor) . . . . . HB
Fill to ½ inch below filler neck

★ **Universal Joints**
Series 3100-3800 . . . . 90 MP
Series P20, P30 CL
Center joint on models with 2-section propeller shaft

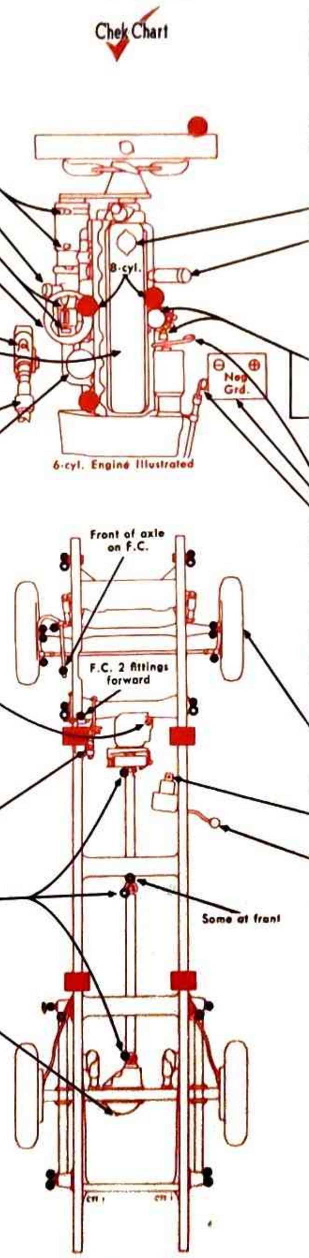
DIFFERENTIAL

Standard Series 3100-3800 . . . . 90 MP
80 grade may be used for extended periods of extremely low temperatures
Standard Series P20, P30 . . . . MP
Above +100°, 140; above +10°, 90; below +10°, 80
Positraction . . . . 90 MP*
Identification: Circular metal tag under fill plug
★ Maintain level to fill plug hole
CAPACITY Series 3100, 3200, 4½ pints; all other models, 6½ pints
15 DRAIN and REFILL except:
10 1960-63 P20, P30, severe service
24 1964-65, normal service
12 1964-65, severe service

GAS TANK

	Gallons
All models	17½*

* Mounted inside frame, 17, outside frame, 18; 3442, P23, P33 and Carryall, 15½; optional P25, P26, P35, P36, 30



🟥 Position for lift adapter
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

*1960-65, 30 may be used for sustained high speed when prevailing daylight temperature is above +90°
CAPACITY 5 quarts, ex. Trademaster V-8 and 6-cyl. 230 engine, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap . . . . Wash and oil MO OC
With PCV system, no service

PCV System . . . . Service
1964-65 . . . . Check OC
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses every 6,000 miles
Others . . . . CC 10
Remove and clean valve and hose in valve cover on 6-cyl. 230 engine

Distributor Shaft 1955-62
6-cyl. (grease cup) . . . . CL ★
8-cyl. (oil cup) . . . . MO ★

Distributor Cam Lubricator
On Trademaster V-8 and 1963-65 6-cyl. 230 engine
Rotate 180° 12 Replace 24

Crankcase Dipstick . . . . Check level

Battery . . . . Test and fill ★

TRANSMISSION, Automatic . . AF

Check level, fluid warm, engine idling, in NEUTRAL ★
1955-57, early 1958, dipstick under floor pan

CAPACITY, quarts	Initial Refill	Total Refill
Hydra-Matic: 3800; 1958-59 3400, 3500, 3700; 1960-62 P20, P30	7	9½
All other models	6*	8½*
Powerglide: 1963-65 P20	2	2

* Add 1 quart if equipped with trans. oil cooler
DRAIN and REFILL
Hydra-Matic 25
Remove 1 coupling plug and transmission plug
Powerglide 12
Remove oil pan or plug
More often for heavy-duty operation

Front Wheel Bearings . . . . Repack WB
1955-59 10 P20, P30 30
Initial torque, 33 ft. lb., while rotating wheel: final adjustment, loosen only as necessary to insert cotter pin at next hole line-up. Maximum back-off 1/12 turn

Hydrovac Cylinder . . . . VO 10
Fill to plug hole level. 1957-59 series 3100-3800; 1960-62 series P30, left side, outside frame rail

Hydrovac Air Cleaner . . . . Wash 10

BRAKE ADJUSTMENT

Adjust the brakes as follows:
1955-62
1. Make certain parking brake cables are slack
2. Expand shoes until light uniform drag is felt when revolving drum
3. Back off adjustment 7 notches on ½-ton models. On ¾- and 1-ton models, back off adjustment until drum turns without drag, but not more than 7 notches: 1961 ½ ton, back off 12 notches
4. Repeat procedure at each wheel

All 1963; 1964 P30
1. Expand shoes until light uniform drag is felt when revolving drum
2. Back off adjustment until drum turns freely
3. Repeat procedure at each wheel

1964-65 P20; 1965 P30: Brakes are self-adjusting. Adjustment not normally required
Bleeding sequence: LR, RR, LF, RF
Power brake, power brake rear valve, forward valve (if equipped), then wheels LR, RR, LF, RF

KEY TO INTERVALS

★ 1955-63, Every 1,000 miles
1964-65, Every 6,000 miles or 6 months
OC Every crankcase oil change
C Conditional service
Numbered symbols indicate intervals in thousands of miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Differential: Meeting Spec. MIL-L-2105B
SG	Steering Gear Lubricant
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET TRUCKS

1960-65 Series C10, C20; 1963-65 Series P10

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1960	24	53
	24T	70
1961-65	24	53, 61
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
4-cyl., 6-cyl.	130
V-8	140

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC: 1960-61, C45; 1962, C46; 1963-65 4-cyl., 6-cyl. 230, 46N, 292, C42N; 1960-63 V-8, C45; 1964-65, 44

Gap: .035" Torque: 25 ft. lb.

IGNITION POINTS

Delco

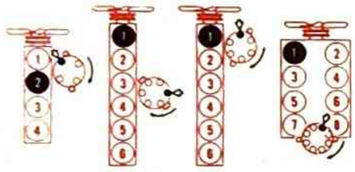
Gap: .016" used; .019" new

Dwell angle: 6-cyl. 1960-62, 28°-35°; 1963-65, 4-cyl., 6-cyl., 31°-34°; V-8, 28°-32°

CONDENSER

Delco Capacity: .18-.23 mfd

Cylinder Numbering Sequence



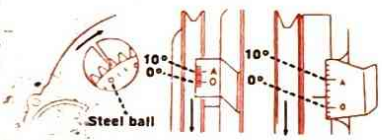
1960-62 1963-65

Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower. Series P10, use No. 2 spark plug or distributor cap tower and oil pan timing mark
4. 6-cyl. 1960-62: Set octane selector to 0°
   6-cyl. 1963-65, 4-cyl., V-8: Disconnect distributor vacuum line and tape manifold opening
5. 4-cyl., 6-cyl.: Set idle speed to recommended rpm. V-8: Set idle speed to 1000 rpm. (Both engines, transmission in NEUTRAL)
6. Observe timing mark through opening in flywheel housing, crankshaft pulley or oil pan tab and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



6-cyl. 1960-62 4-, 6-cyl. 1963-65 V-8

Timing Setting (Before Top Dead Center):
6-cyl. 1960-62, 5° (First short radial mark clockwise from steel ball or stamped O aligned with pointer)
4-cyl., 6-cyl.: 1963-65, 4° (Each line equals 2°)
V-8, 4° (Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 4-cyl., 6-cyl. 3½-4½ lb. except 292 eng. 5¼-6½ lb.; at idle to 1000 rpm
V-8, 5¼-6½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
CARTER	
1-bbl. YF	1½
ROCHESTER	
1-bbl. B	1½-2½
2-bbl. 2G	1½

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

(engine hot)
6-cyl., 1960-62: Intake .006"; exhaust .018"
4-cyl., 6-cyl., 1963-65: Hydraulic lifters
V-8: Hydraulic lifters

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

Without Heater	1960-61	1962
6-cyl.	17*	17¼*
8-cyl.	17½*	17¾*

* Heavy-duty, add ½ qt.; Powerglide, add ¾ qt.

	1963			1964-65		
C10	Std.	P.G.	H.D.	Std.	P.G.	H.D.
230 eng.	11	12	12	12	13½	13
292 eng.	13	13½	13½	13½	14	14
283 eng.	14	15½	15½	18	18½	18½
C20						
230 eng.	11	12	12	12	13½	13
292 eng.	13½	13½	14	13½	14	15
283 eng.	15½	15½	16	19	18½	19½
P10						
6-cyl.	14	14	...	12½	12½	...
4-cyl.	8¼	8¼	...	9½	9½	...

Cooling system pressure: 1960-62, 7 pounds; 1963-65, 13 pounds

OC **Oil Fill Cap** .... Wash and oil **MO**

★ **Generator** 1960-62 (2 oil cups) .... **MO**

Fuel Filter Element .... Replace
In carburetor fuel inlet
5 1960-61 8-cyl.
C 1962 8-cyl.; all 1963-65

C **Manifold Heat Control Valve** .... **MH**
8-cyl., right side, center
Not on some 292 6-cyl. engines

Air Cleaner Element .... Service
Oil bath .... Wash and fill **MO**
Above +32°, 50; below +32°, 20
C 1960-63 **★** 1964-65
Polyurethane ...... Wash and oil 10W **MO**
4 1960-63 **12** 1964
12 Dry type 1964-65 .... Check
Replace if necessary. If not replaced, recheck every 6,000 miles until replaced

★ **Master Cylinder** (cover) .... **HB**
Fill to ½ inch below top of reservoir

PCV System .... Service
OC 1964-65 .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses every 6,000 miles
10 Others .... **CC**
Remove and clean valve and hose
1963-65, 6-cyl. in valve cover; 8-cyl. at rear of carburetor. Other 6-cyl., right side of block; 8-cyl., rear at breather outlet connector

★ **Steering Gear** (plug) .... **SG**

★ LUBRICATION FITTINGS (•) .. CL

Fittings shown by (O) are not found on every model
Ball joints must be at +10° or more before lubricating

TRANS., Manual .... 90 MP, GL

80 grade may be used for extended periods of extremely low temperatures
★ Maintain level to fill plug hole

CAPACITY, pints	3-Speed	3-Speed H.D.	4-Speed
All models	2	2¾	6¼

DRAIN and REFILL
10 1960-63
More often for off-highway or urban service
1964-65 Not recommended

10 **Hydrovac Cylinder** 1960-62 .... **VO**
Fill to plug hole level

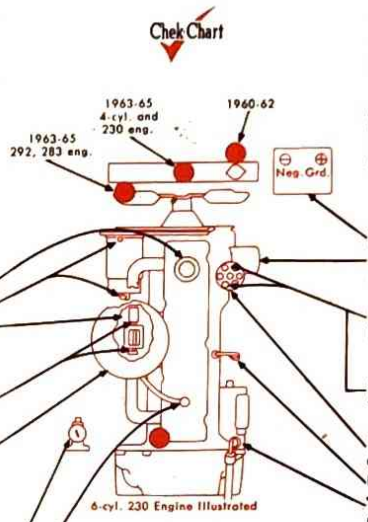
DIFFERENTIAL .... MP*

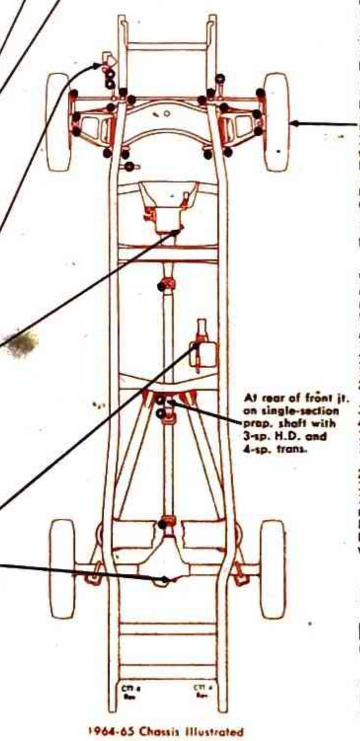
Above +100°, 140; above +10°, 90; below +10°, 80
★ Maintain level to fill plug hole. Some, plug forward
CAPACITY C10, P10, 4½ pints; C20, 6½ pints
DRAIN and REFILL
15 1960-63 Normal service **10** Severe service
24 1964-65 Normal service* **12** Severe service
* C10, P10, drain and refill not recommended for normal service
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK .... Gallons

C10, C20 1960-62	17½*
1963-65	18½*
P10	20

* Optional, 20½




At rear of front jt. on single-section prop. shaft with 3-sp. H.D. and 4-sp. trans.
1964-65 Chassis Illustrated

● Cooling system drain

CRANKCASE .... "MS" MO

Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

*30 may be used for sustained high speed when prevailing daylight temperature is above +90°
CAPACITY C10 and C20, 6-cyl. 5 qt. except 230 eng., 4 qt.; 8-cyl. 4 qt. P10, 6-cyl. 4 qt.; 4-cyl. 3½ qt.
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill **★**

Oil Filter ...... Replace, add extra quart oil
Left side rear on 8-cyl.
1960-63 **4** 1964-65 **★**

Distributor Shaft 1960-62
Distributor at rear on 8-cyl.
6-cyl. (grease cup) .... **CL** **★**
8-cyl. (oil cup) .... **MO** **★**

Distributor Cam Lubricator
Trademaster V-8 and 1963-65 4-cyl. and 6-cyl.
Rotate 180° **12**. Replace **24**

Spinner Governor Air Cleaner Element .. Replace **12**
On C10, C20 8-cyl.

Crankcase Dipstick .... Check level

TRANSMISSION, Automatic .. AF

Check level, fluid warm, engine idling, in NEUTRAL .... **★**

CAPACITY, quarts	Refill
1960-62	4½
1963-65	2

DRAIN and REFILL **12**
1960-62, remove transmission plug only. 1963-65, remove oil pan or plug
More often for heavy-duty operation

Front Wheel Bearings .... Repack **WB** **30**
1960-62, initial torque, 33 ft. lb., while rotating wheel; final adjustment, loosen only as necessary to insert cotter pin
1963-65 C10, P10, initial torque, 15 ft. lb. Back off nut ⅙ turn; final adjustment, loosen only as necessary to insert cotter pin. End play 0 to .007"
1963-65 C20, initial torque, 40 ft. lb. Back off nut ⅓ turn; final adjustment, tighten only as necessary to insert cotter pin. End play 0 to .010"

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:
1960-62: Follow procedure on Chart CTT-1
1963: Series C10, P10
1. Disconnect parking brake cables
2. Expand shoes until light uniform drag is felt when revolving drum
3. Back off adjustment 12 notches
4. Repeat procedure at each wheel

1963: Series C20
1. Expand shoes until light uniform drag is felt when revolving drum
2. Back off adjustment until drum turns freely
3. Repeat procedure at each wheel

1964-65: Brakes are self-adjusting. Adjustment not normally required
Bleeding sequence: LR, RR, LF, RF
Power brake, power brake rear valve, forward valve (if equipped), then wheels LR, RR, LF, RF

KEY TO INTERVALS

★ 1960-63, Every 1,000 miles
1964-65, Every 6,000 miles or 6 months
4 Every 4,000 miles or 6 months
Other numbered symbols indicate intervals in thousands of miles
OC Every crankcase oil change
C Conditional service
Replace fuel filter element only if carburetor flooding occurs
Lubricate manifold heat control valve if shaft is not free
Service oil bath air cleaner as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Differential: Meeting Spec. MIL-L-2105B
SG	Steering Gear Lubricant
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

CHEVROLET TRUCKS
1960-62 Series C30, C40
1963-65 Series C30

TUNE-UP DATA
See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1960	24 24T	53 70
1961-65	24 24T	53, 61 70

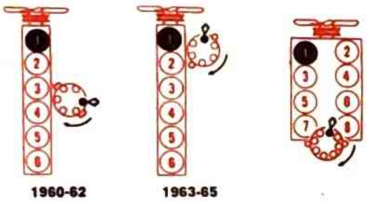
COMPRESSION PRESSURE
(at cranking speed with throttle open) psi
6-cyl. 130
V-8 140
Maximum variation between cylinders, 20 psi

SPARK PLUGS
AC: 1960-61, C45; 1962, C46; 1963-65 6-cyl. 230, 46N, 292, C42N; 1960-63 V-8, C45; 1964-65, 44
Gap. .035" Torque: 25 ft. lb.

IGNITION POINTS
Delco
Gap: .016", used; .019", new
Dwell angle: 6-cyl. 1960-62, 28°-35°; 1963-65, 31°-34°; V-8, 28°-32°

CONDENSER
Delco Capacity: .18-.23 mfd

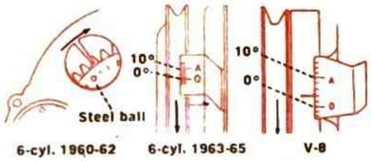
Cylinder Numbering Sequence



Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. 6-cyl. 1960-62, Set octane selector to 0°
   6-cyl. 1963-65, V-8: Disconnect distributor vacuum line and tape manifold opening
5. 6-cyl.: Set idle speed to recommended rpm
   V-8: Set idle speed to 1000 rpm (Both engines, transmission in NEUTRAL)
6. Observe timing mark through opening in flywheel housing or at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
6-cyl.: 235 eng. 5° (First short radial mark clockwise from steel ball or stamped O aligned with pointer); 261 eng. TDC (Steel ball or stamped O aligned with pointer), 230, 292 engs. 4°
V-8, 4° (Each line equals 2°)

FUEL PUMP
AC mechanical
Pressure: 6-cyl. 3½-4½ lb. except 292 eng. 5¼-6½ lb.; at idle to 1000 rpm
V-8, 5¼-6½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

ROCHESTER	Idle Mixture (initial turns)
1-bbl. B	1½-2½
2-bbl. 2G	1½

ENGINE IDLE SPEED
Manual Trans.: 450-500 rpm
Auto. Trans.: 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES
(engine hot)
6-cyl: 235 eng. Intake .006"; exhaust .018"
261 eng. Intake .006"; exhaust .020"
230, 292 engs., Hydraulic lifters, nonadjustable
V-8: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	Without Heater 1960-61	Without Heater 1962
C30 6-cyl.	17*	17¼*
C30 8-cyl.	17½*	17¾*
C40 6-cyl.	17½	17¼*
C40 8-cyl.	18	18¼*

* Heavy-duty, add ½ quart

C30	1963 Std.	1963 H.D.	1964-65 Std.	1964-65 H.D.
230 engine	11	12	12	13
292 engine	13½	14	13½	15
283 engine	15½	16	19	19½

Cooling system pressure: 1960-62, 7 pounds; 1963-65; 13 pounds

OC **Oil Fill Cap** .... Wash and oil **MO**
Some 6-cyl., center of valve cover. 8-cyl., left front

★ **Generator** 1960-62 (2 oil cups) .... **MO**

Fuel Filter Element .... Replace
In carburetor fuel inlet
5 1960-61 8-cyl.
C 1962 8-cyl.; all 1963-65

C **Manifold Heat Control Valve** .... **MH**
8-cyl., right side center
Not on some 292 6-cyl. engines

Air Cleaner Element .... Service
Oil bath .... Wash and fill **MO**
Above +32°, 50; below +32°, 20
C 1960-63 ★ 1964-65
Polyurethane .... Wash and oil 10W **MO**
4 1960-63 **12** 1964
12 Dry type 1964-65 .... Check
Replace if necessary. If not replaced, recheck every 6,000 miles until replaced

★ **Master Cylinder** (cover) .... **HB**
Fill to ½ inch below top of reservoir

PCV System .... Service
OC 1964-65 .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses every 6,000 miles
10 Others .... **CC**
Remove and clean valve and hose
1963-65, 6-cyl. in valve cover; 8-cyl. at rear of carburetor. Other 6-cyl., right side of block; 8-cyl., rear at breather outlet connector

★ **Steering Gear** (plug) .... **SG**

★ LUBRICATION FITTINGS (•) .. CL
Fittings shown by (O) are not found on every model
Ball joints must be at +10° or more before lubricating

TRANSMISSION .... 90 MP, GL
80 grade may be used for extended periods of extremely low temperatures
★ Maintain level to fill plug hole

CAPACITY, pints	3-Speed H.D.	4-Speed
C30	2¾	6¼
C40	...	6¼

DRAIN and REFILL
10 1960-63
More often for off-highway or urban service
1964-65 Not recommended

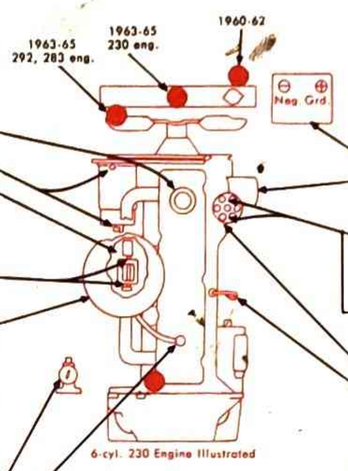
10 **Hydrovac Cylinder** 1960-62 .... **VO**
Fill to plug hole level. Some, right side

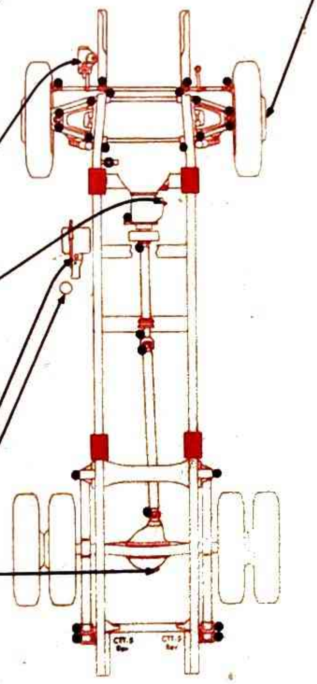
10 **Hydrovac Air Cleaner** 1960-62 .... Wash
Some, right side

DIFFERENTIAL .... MP
Above +100°, 140; above +10°, 90; below +10°, 80
★ Maintain level to fill plug hole
CAPACITY C30, 6½ pints; C40, 14 pints
DRAIN and REFILL
15 1960-63 Normal service **10** Severe service
24 1964-65 Normal service **12** Severe service

GAS TANK .... Gallons
1963-65 C30 .... 18½*
All others 17½*
* Optional, 20½; outside frame, 20

Chek-Chart





🟥 Position for lift adapter
● Cooling system drain

CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

*30 may be used for sustained high speed when prevailing daylight temperature is above +90°
CAPACITY 6-cyl., 230, 4 quarts; all others, 5 quarts; 8-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Oil Filter .... Replace, add extra quart oil
Left side rear on 8-cyl.
1960-63 **4** 1964-65 ★

Distributor Shaft 1960-62
Distributor at rear on 8-cyl.
6-cyl. (grease cup) .... **CL** ★
8-cyl. (oil cup) .... **MO** ★

Distributor Cam Lubricator
Trademaster V-8 and 1963-65 6-cyl.
Rotate 180° **12** Replace **24**

Spinner Governor Air Cleaner Element .. Replace **12**

Crankcase Dipstick .... Check level

Front Wheel Bearings .... Repack **WB** **30**
1960-62, initial torque, 33 ft. lb., while rotating wheel; final adjustment, loosen only as necessary to insert cotter pin
1963-65 C30, initial torque, 40 ft. lb. Back off nut ⅓ turn; final adjustment, tighten only as necessary to insert cotter pin. End play 0 to .010"

BRAKE ADJUSTMENT
With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:

1960-62: 30 series, Front and rear; 40 series, Front
1. Make certain parking brake cables are slack
2. Expand shoes until light drag is felt when revolving drum
3. Back off adjustment until drums turn freely, but not more than 7 notches; 1961 ½ ton, back off 12 notches

1960-62: 40 series, Rear
1. Two adjustment openings are provided on each backing plate. Use a suitable tool to turn rearmost adjuster until light drag is obtained
2. Back off adjustment 3 notches
3. Repeat steps 1 and 2 for forward adjuster
4. Repeat procedure at each wheel

1963-64: 30 series
1. Expand shoes until light drag is felt when revolving drum
2. Back off adjustment until drum turns freely
3. Repeat procedure at each wheel

1965: 30 series
Brakes are self-adjusting. Adjustment not normally required
Bleeding sequence: LR, RR, LF, RF
Power brake rear valve, forward valve (if equipped), then wheels LR, RR, LF, RF

KEY TO INTERVALS
★ **1960-63, Every 1,000 miles**
1964-65, Every 6,000 miles or 6 months
4 **Every 4,000 miles or 6 months**
Other numbered symbols indicate intervals in thousands of miles
OC **Every crankcase oil change**
C **Conditional service**
Replace fuel filter element only if carburetor flooding occurs
Lubricate manifold heat control valve if shaft is not free
Service oil bath air cleaner as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil
MP	Multi-Purpose Gear Lubricant Differential: Meeting Spec. MIL-L-2105B
SG	Steering Gear Lubricant
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease

CHEVROLET CORVAIR 95

1961-65 All Models Including Greenbrier

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1961-63	53	35, 42
1964-65	53	42

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi

All 130

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC: Turbo-Air, 46FF; Super Turbo-Air, 44FF
Gap: .035" except 1964-65 Super Turbo-Air, .030"
Torque: 20-25 ft. lb.

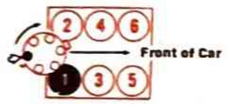
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

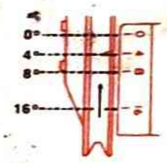


Firing Order: 1, 4, 5, 2, 3, 6

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
Turbo-Air: Manual Trans. 4° (Range 4°-8°)
Super Turbo-Air: Man. Trans. 12° (Range 12°-16°)
Automatic Trans. 12° (Range 12°-16°)
Note: Advance timing as far as possible within specifications, unless detonation (spark knock) occurs

FUEL PUMP

AC mechanical
Pressure: 4-5 lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
ROCHESTER (2) 1-bbl. H	1½	manual*	manual*

* 1962, index; 1963-65, 2 turns up from free entry in choke lever

ENGINE IDLE SPEED

Manual Trans., Turbo-Air, 450-500 rpm; Super Turbo-Air, 600-650 rpm

Auto. Trans., 450-500 rpm in DRIVE. Set idle speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

Steering Gear (plug) .... **SG**
Maintain level to fill plug hole
★ 1961-63 **36** 1964-65

★ **Brake Master Cylinder** (plug or cap) .... **HB**
Service thru floor of driver's compartment
Fill to level mark or ¼ inch below top of reservoir

★ **LUBRICATION FITTINGS (•)** .. **CL**
Fittings shown by (O) are not found on every model
Ball joints must be at +10° or more before lubricating

Clutch Linkage .... Coat **WG**
5 1961-62 ★ 1963-65

Gearshift Control Shaft Connector .... Coat **WG**
5 1961-62 **12** 1963-65

TRANSMISSION, Manual .. 80 **MP**
Multi-viscosity 80-90 may be used
★ 1961-63, maintain level to fill plug hole
1964-65, check level with axle dipstick. See DIFFERENTIAL for filling instructions
CAPACITY 3-speed, 2 pints; 4-speed, 3 pints
DRAIN and REFILL
10 1961-62
1963-65 Not recommended

Universal Joints Both sides .... Repack **WB**
25 1961-62 **30** 1963
More often under adverse conditions
1964-65, no service required

DIFFERENTIAL .... 80 **MP***
Multi-viscosity 80-90 may be used
★ 1961-63, maintain level to fill plug hole
1964-65, check lubricant level with axle dipstick located in engine compartment, when checking crankcase. Manual transmission models, add lubricant thru fill hole in transmission to level plug hole in differential. Powerglide models, fill differential thru level plug hole in differential
CAPACITY 1961-62, 3 pints; 1963-65, 4½ pints
DRAIN and REFILL
10 1961-62
1963-65 Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug or yellow paint on fill plug

GAS TANK .... Gallons
All models 18½

TIRES ....Pressure	Front	Rear
7.00-14, 4 ply	24	30
7.00-14, 6 ply	24	34
7.00-14, 6 ply*	24	45
7.00-14, 8 ply*	24	60

* Light truck type

Rotate tires, Method B, then balance wheels
5 1961-62 **6** 1963-65

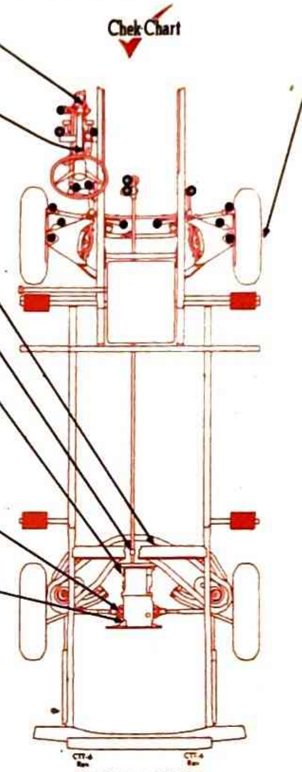
Fuel Filter Element Both sides .... Replace
Located in carburetor fuel line
15 1961, if flooding occurs replace more often
C 1962-65, only if flooding occurs

★ **Battery** .... Test and fill

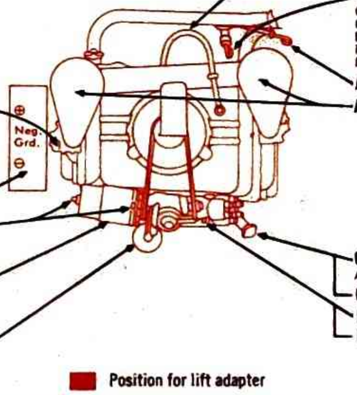
Generator (2 oil cups) .... **MO**
Do not overfill cup near pulley
★ 1961-62 **12** 1963-65

Engine Oil Cooler .... Clean
Remove cover, clean with brush or compressed air
5 1961-62 **12** 1963-65

Oil Filter .... Replace, add extra pint oil
4 1961-62 ★ 1963-65



LIFTING CAUTION
Never lift vehicle with bumper jack



🟥 Position for lift adapter

Front Wheel Bearings .... Repack **WB**
1961-62 **10** 1963 **30** 1964 **36** 1965 **C**
1965, repack whenever wheels are removed for brake service
Initial torque, 15 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn. If slot and hole do not align, back off ½ flat or less. Final adjustment should be 0 (no preload) to .007" end play

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1961-62

1. Loosen parking brake cable adjustment nut
2. Using a suitable tool inserted into adjustment slot in backing plate, expand shoes until a heavy uniform drag is felt when revolving drum
3. Back off adjustment 12 notches on the front brakes and 15 notches on rear brakes
4. Repeat procedure at each wheel
5. Readjust parking brake cable

1963-65: Brakes are self-adjusting. Adjustment is not normally required

Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ **1961-62, Every 1,000 miles**
1963-65, Every 6,000 miles or 6 months
4 **Every 4,000 miles or 6 months**
Other numbered symbols indicate intervals in thousands of miles
OC **Every crankcase oil change**
C **Conditional service**

CRANKCASE		"MS" MO
Above +32°	30	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

PCV System .... Service **OC**
1963-65 .... Check
Valve type, test valve and replace if necessary; fixed orifice type, clean as required. Clean hoses every 6,000 miles.
Others .... **CC**
Remove and clean valve and hose

TRANSMISSION, Automatic .. **AF**
Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY, refill approx. 3 quarts. Do not overfill
DRAIN and REFILL **12**
Remove fill tube to drain
More often for heavy-duty operation

Axle Dipstick 1964-65 .... Check level

Air Cleaner Elements .... Service
Polyurethane ...... Wa[illegible] oil 10W **MO**
1961-62 **2** 1963-64 ★
Oil bath .... Wash and fill **MO** ★
Above +32°, 50; below +32°, 20
Dry type .... Check **6**
Replace if necessary. If not replaced, recheck element every 6,000 miles until replaced
More often with prolonged dusty driving

Crankcase Dipstick .... Check level
Attached to oil fill cap

Oil Fill Cap

Distributor Shaft (oil cup) 1961 ...... 10W **MO** ★

Distributor Cam Lubricator 1963-65
Rotate 180° **12**
Replace **24**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease
WG	White Waterproof Grease

* Positraction, use same lubricant as standard axle

CHEVROLET TRUCKS

1964-65 Chevy Van Model G-1205

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	22F 24T	44 70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
All	130

Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; for continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

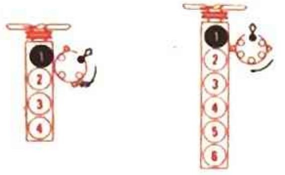
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

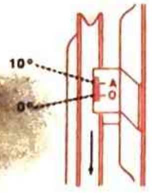


Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 500 rpm
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4-cyl.: 4° (Range, 4°-8°)
6-cyl.: 8° (Range, 6°-10°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 3½-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. YF	1½	manual	manual

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 450-500 rpm in DRIVE. Set speed as low as possible to obtain smooth idle without creep or harsh transmission shifts

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts Without Heater
4-cyl.	9½
6-cyl.	12

Cooling system pressure, 13 lb.

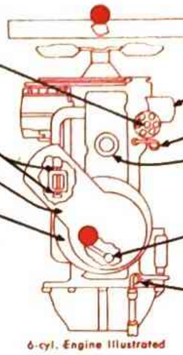
Distributor Cam Lubricator
12 Rotate 180° 24 Replace

C **Manifold Heat Control Valve** . . . . MH

C **Fuel Filter** . . . . Replace element
Located in carburetor fuel inlet

Air Cleaner Element . . . . Service
★ Oil bath . . . . Wash and fill MO
Above +32°, 50; below +32°, 20
12 Polyurethane . . . . Wash and oil
12 Dry type . . . . Check
Replace if necessary. If not replaced, recheck every 6,000 miles until replaced

Chek Chart



6-cyl. Engine Illustrated

CRANKCASE

		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30,5W-30
Below 0°	5W	5W-20,5W-30

* 30 may be used for high speeds above +90°
CAPACITY 4-cyl., 3½ quarts; 6-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Filter . . . . Replace element ★
4-cyl., add extra pint oil; 6-cyl., extra quart

Crankcase Dipstick . . . . Check level

Oil Fill Cap . . . . Wash and oil MO OC
Sealed cap, no service

PCV System . . . . Check OC
Valve type, test valve and replace if necessary. Fixed orifice type, clean as required. Clean hoses every 6,000 miles

TRANSMISSION, Automatic . . AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 1½ quarts
DRAIN and REFILL 12
Remove oil pan or plug
More often for heavy-duty operation

★ **Master Cylinder** . . . . HB
Keep filled to within ¼ inch of opening
Reached thru floor

36 **Steering Gear** (plug) . . . . SG

★ LUBRICATION FITTINGS (•). . CL

Fittings shown by (O) are not found on every model

TRANSMISSION, Manual . . 80 MP

80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended

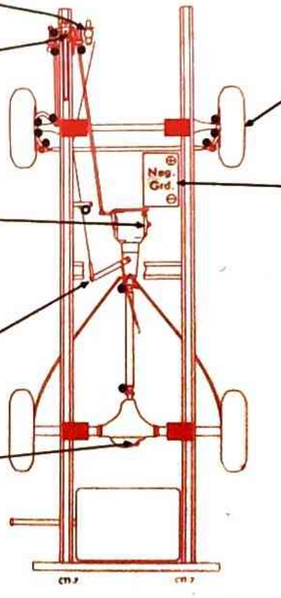
★ **Parking Brake Linkage** . . . . Coat CL
Coat linkage, pulleys and cables

DIFFERENTIAL . . . . 80 MP•

80-90 may be used
★ Maintain level to fill plug hole
Some, fill plug right side forward
CAPACITY 3½ pints except 2900 lb. axle, 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK

	Gallons
All models	20



Front Wheel Bearings . . . . Repack WB 36
Initial torque, 15 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

Battery . . . . Test and fill ★

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

★ Every 6,000 miles or 6 months.
12 Every 12,000 miles
24 Every 24,000 miles
30 Every 30,000 miles
36 Every 36,000 miles
OC Every crankcase oil change
C Conditional service
Lubricate manifold heat control valve if shaft is not free
Replace fuel filter element if carburetor flooding occurs

🟥 Position for lift adapter
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CL	Chassis Lubricant Water Resistant EP Type
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil
MP•	Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease

• For Positraction differential, use Special Positraction Lubricant

DODGE TRUCKS

1961-65 R and S Series D100, P100, D200, P200, D300, P300

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1961-63	24H	50
1964-65	24H	48

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)			min.	max.
1961	6-cyl.		130	160
1962-65	6-cyl.	Manual Trans.	130	160*
		Auto. Trans.	110	140**
1961	8-cyl.		120	160
1962-65	8-cyl.	Manual Trans.	120	160***
		Auto. Trans.	110	140**

* Maximum variation between cylinders, 15 psi
** Maximum variation between cylinders, 20 psi
*** Max. variation: 1962-63, 15 psi; 1964-65, 20 psi

SPARK PLUGS

Champion: 6-cyl., N-6; V-8, J-10Y
Gap: .035"
Torque: 30 ft. lb.

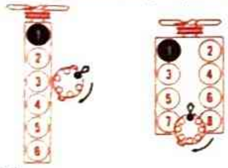
IGNITION POINTS

Prestolite, 1961 V-8; Chrysler, 6-cyl., 1962-65 V-8
Gap: 6-cyl., .017"-.023"; 8-cyl., .014"-.019"
Dwell angle: 6-cyl., 40°-45°; 8-cyl., 1961-62, 27°-32°; 1963-65, 28°-33°

CONDENSER

Prestolite, 1961 V-8; Chrysler, 6-cyl., 1962-65 V-8
Capacity: .25-.285 mfd

Cylinder Numbering Sequence



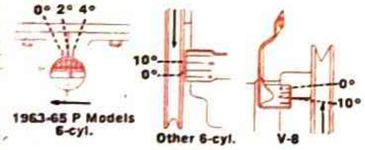
Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed to 500 rpm, 6-cyl.; 475-500 rpm, 8-cyl., transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned*
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

* 1963-65 P Models 6-cyl.: Remove rubber plug at top center of clutch housing

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 6-cyl., 2½°; 8-cyl., 10°

FUEL PUMP

Carter model: 6-cyl., M-2996S; 8-cyl., M-2611S
Pressure: 6-cyl., 3½-5 lb. at idle rpm; 8-cyl., 5-7 lb. at idle rpm
Volume: 1 quart per minute at idle rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Auto. Trans.
BALL & BALL		
1-bbl. BBS	1	index* **
STROMBERG		
2-bbl. WW3	1¼-1⅜	index*

* Choke should not be field calibrated. Replace unit if defective
** 1963-65, 2 rich

ENGINE IDLE SPEED

Manual Trans.: 6-cyl., 550 rpm; 8-cyl., 500 rpm; with headlights on high beam
Auto Trans.: 6-cyl., 550 rpm; 8-cyl., 500 rpm; in NEUTRAL with headlights on high beam

VALVE CLEARANCES

(engine hot and running)
6-cyl.: intake .012", exhaust .024"
8-cyl.: intake .012", exhaust .022"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
6-cyl.	14	13
8-cyl.	21	20

Cooling system pressure, 7 pounds

★ **Power Steering Reservoir** Some 8-cyl. ...... **PS**
Fill to bottom of filler neck or level mark

★ **Battery** .... Test and fill
P models, under floor at right frame rail

Air Cleaner Element .... Service
Dry type .... Clean
8 1965 10 Others
Dry type .... Replace
24 1965 32 Others
OC Oil bath .... Check
C Oil bath .... Wash and fill **MO**
Above +32°, 30; below +32°, 10W

TY **Carburetor Choke Shaft** .... **CC**
Remove air cleaner to service. Apply cleaner to shaft bearings while moving choke valve back and forth. 1963 and earlier, also inject cleaner thru opening around choke piston link

Crankcase Dipstick .... Check level
8-cyl., right side, front

4 **Manifold Heat Control Valve Shaft** .... **MH**
8-cyl., right side, center

★ **Steering Gear** (plug)
Forward of axle on P100, P200, P300; under truck
D100, D200, D300 .... **SG**
Fill to cover worm gear
P100, P200, P300 .... **MP**
Above -10°, 90; below -10°, 80

★ **Clutch Master Cylinder** (cover or plug) ..... **HB**
Fill to ¼ inch below top of reservoir
P100, P200, P300, service thru floor

★ **Brake Master Cylinder** (cover or plug) ...... **HB**
Fill to ¼ inch below top of reservoir
P100, P200, P300, service thru floor

C **Automatic Trans. Filter** (under truck) ... Replace
1962-63 only

★ LUBRICATION FITTINGS (•) .. CL

Fittings shown by (O) are not found on every model

★ **Parking Brake Control Lever** (oil hole) ...... **MO**

TRANSMISSION, Manual

★ Maintain level to fill plug hole. Some right side
1963-65 3-spd. A745 after No. 1252053 .... **AF**
Others .... "MS" **MO, GL**
Above +90°, 50 or 140; above +32°, 50 or 90; below +32°, 30 or 80
CAPACITY 3-speed: **3¼ pints** except D300 and P300, **6 pints**. 4-speed: **5½ pints** except 1964-65 NP-435, **7 pints**
DRAIN and REFILL
20 1961-64; 1965, severe service
32 1965, normal service

8 **Power Brake Air Cleaner** .... Replace
Located inside driver's compartment

DIFFERENTIAL .... MP*

Above +90°, 140; above -10°, 90; below -10°, 80
★ Maintain level to fill plug hole
D200, D300, P200, P300, plug on rear cover
CAPACITY D100, P100, **4 pints**; D200, P200, **5½ pints**; D300, P300, **6 pints**
DRAIN and REFILL
20 1961-64; 1965, severe service
32 1965, normal service
FULL-TRACTION IDENTIFICATION:
Metal tag attached to housing near fill plug

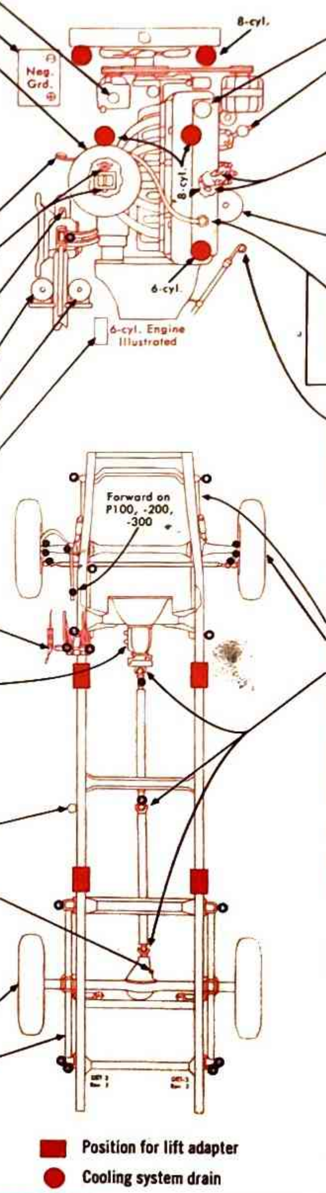
C **Rear Wheel Bearings** .... Check **WB**
Clean and repack if necessary. Remove axle shafts

★ **Springs** .... Coat **PO**

GAS TANK .... Gallons

D100, D200	18*
D300	18◆
P100, P200, P300	15¼

* Town Panel, Town Wagon, Cowl, 17
◆Cowl, 15¼



8-cyl.
Neg. Grd.
8-cyl.
6-cyl.
6-cyl. Engine Illustrated
Forward on P100, -200, -300
Position for lift adapter
Cooling system drain

CRANKCASE .... "MS" MO

		"MS" MO
Above +32°	30	20W-40, 10W-30
Above +10°	20W	10W-30
Above -10°	10W	10W-30, 5W-20
Below -10°	...	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 **MO** OC
8-cyl., left side, front

Fuel Filter
Ceramic element .... Clean ★
8-cyl., right front at top
Paper element 1961, 1964-65 ..... Replace 10
In front of carburetor

Distributor Shaft (oil cup) .... **MO**
8-cyl., rear center
1961-63 ★ 1964-65 12
Wick under rotor .... Sparingly **MO**
1961-63 10 1964-65 12

Oil Filter .... Replace
Add extra quart oil. 8-cyl., reach under truck
1961-64 4 1965 8

PCV System .... Check 4
Check system. Clean hose and carburetor passages if clogged. 1963 and earlier, disassemble and clean valve with CC. 1964-65 California vehicles, clean valve with CC or, if clogged, replace; also service oil fill cap. Other 1964-65, replace valve if clogged or at least once a year. Do not clean

Crankcase Breather Outlet Element ... Wash ★
Some 1961-62. Wash entire draft tube assembly

TRANSMISSION. Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below -10°, replace 1 quart fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
1961	5	10½
1962-65	5	9

DRAIN and REFILL
1961-64 20 1965 32
Remove 1 converter plug; 1961, disconnect fill pipe; 1962-65, remove drain plug
Drain more frequently under severe service
1964-65, replace internal filter at time of drain

Springs .... Coat **PO** ★
Front Wheel Bearings .... Check **WB** C
Clean and repack if necessary
Universal Joints .... **UJ** ★
Inspect for leaks, repack and replace seals if necessary

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1. Using a suitable tool inserted into adjustment opening in backing plate, expand shoes until wheel can just be turned by hand
2. Back off adjustment 7-9 notches or until wheel turns freely without drag
3. Repeat procedure at each wheel

1965 D100, D200, P200, self-adjusting brakes; adjustment not normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 2,000 miles**
OC **Every crankcase oil change**
TY **Twice yearly**
C **Conditional service**
- Wash and fill oil bath air cleaner when dirt reaches lower offset
- Replace automatic transmission filter at time of transmission drain
- Check rear wheel bearings when axle shaft is removed. Clean and repack if necessary
- Check front wheel bearings when wheel is removed for service. Clean and repack if necessary

Numbered symbols indicate intervals in thousands of miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting MIL-L-2105 or MIL-L-2105B
PO	Penetrating Oil
PS	Power Steering Fluid MoPar Part No. 2084329
SG	Steering Gear Lubricant
UJ	Universal Joint Grease Grade 0
WB	Wheel Bearing Grease

* Full-Traction, use MoPar Rear Axle Lubricant Part No. 2585318

DODGE TRUCKS

1964-65 A-100 Compact All Models

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY		AABM Group No.	Amp. Hrs.
1964	170 engine	20H	38
	225 engine	24H	48
1965	All	24H	48

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
6-cyl. Auto. Trans.	110	140*
Manual Trans.	130	160**
V-8	120	150*

* Maximum variation between cylinders, 20 psi
** Maximum variation between cylinders, 15 psi

SPARK PLUGS

Champion N-14Y*
Gap: .035"
Torque: 30-32 ft. lb.
* Gasket not required for 6-cyl.

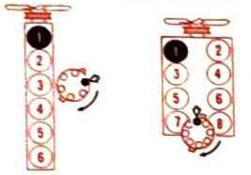
IGNITION POINTS

Chrysler
Gap: 6-cyl., .017"-.023"; V-8, .014"-.019"
Dwell angle: 6-cyl., 40 -45 ; V-8, 28 -33

CONDENSER

Chrysler
Capacity: .25-.285 mfd

Cylinder Numbering Sequence

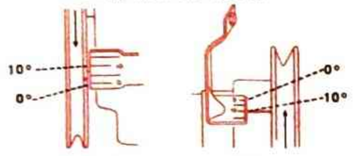


Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Loosen clamp screw, turn distributor until specified timing mark and pointer are aligned
7. Retighten distributor clamp and recheck alignment of timing mark
8. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



6-cyl.   V-8

Timing Setting (Before Top Dead Center):
6-cyl., 2½ °; V-8, Man. Trans. 5°, Auto. Trans. 10°

FUEL PUMP

Carter model 6-cyl., MS-3674S; V-8, MS-3673S
Pressure: 6-cyl., 3½-5 lb. at idle rpm; V-8, 5-7 lb. at idle rpm
Volume: 1 quart per minute or less at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
BALL & BALL			
1-bbl. BBS	1	2 rich*	2 rich*
2-bbl. BBD	1	index*	index*
HOLLEY			
1-bbl. R	1	index	index

* Choke should not be field calibrated. Replace unit if defective

ENGINE IDLE SPEED

Manual Trans.: 6-cyl., 550 rpm; V-8, 500 rpm; with headlights on high beam
Auto. Trans.: 6-cyl., 550 rpm; V-8, 500 rpm; in NEUTRAL with headlights on high beam

VALVE CLEARANCES

(engine hot and running)
6-cyl.: Intake .012"; exhaust .024"
V-8: Intake .013"; exhaust .021"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

COOLING SYSTEM	Quarts Without Heater
170 engine	11
225 engine	12
273 engine	16

Cooling system pressure, 14 pounds

20 **Fuel Filter** .... Replace

Crankcase Dipstick .... Check level
8-cyl., right side front

Air Cleaner Element .... Service
8 Dry type .... Clean
24 Dry type .... Replace
4 Oil bath .... Wash and fill **MO**
Above +32 , 30; below +32°, 10W

TY **Carburetor Choke Shaft** .... **CC**
Remove air cleaner to service. Apply cleaner to shaft bearings while moving choke valve back and forth

4 **Manifold Heat Control Valve Shaft** .... **MH**
8-cyl., right side center

★ **Steering Gear** (plug) .... **MP**
Above -10°, 90; below -10°, 80

★ **Parking Brake Cable Pulley** .... **MO**

★ **Brake Master Cylinder** (cover) .... **HB**
Fill to ¼ inch below top of reservoir

★ **LUBRICATION FITTINGS** (•) .. **CL**
Fittings shown by (O) are not found on every model

★ **Springs** .... Coat **PO**

32 **Torque Shaft** .... **LM**
Disassemble, clean and repack at both ends

TRANSMISSION, Manual ..... AF

★ Maintain level to fill plug hole
CAPACITY 6 pints, except A-745, 3¼ pints
DRAIN and REFILL
32 Normal service
20 Severe service

★ **Universal Joint** .... **UJ**
Ball and trunnion type, 2 ounces Grade 2; cross type, Grade 0
Inspect for leaks, repack and replace seals if necessary

★ **Springs** .... Coat **PO**

★ **Universal Joint** .... Grade 0 **UJ**
Inspect for leaks, repack and replace seals if necessary

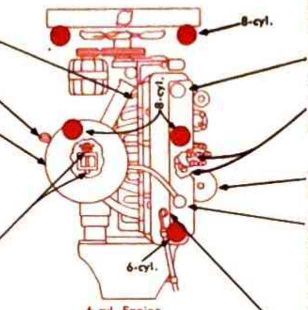
DIFFERENTIAL .... MP*

Above +90°, 140; above -10°, 90; below -10°, 80
★ Maintain level to fill plug hole
CAPACITY 4 pints
DRAIN and REFILL
32 Normal service
20 Severe service
FULL-TRACTION IDENTIFICATION:
Metal tag attached to housing near fill plug

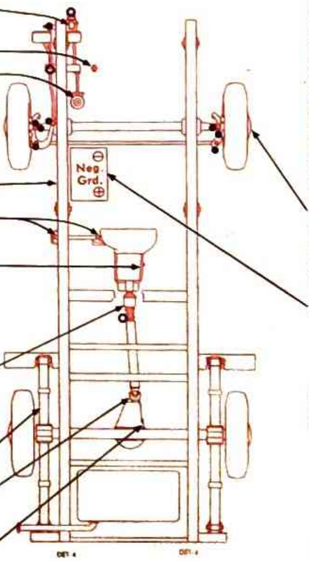
GAS TANK .... Gallons

All models 21

Chek Chart



6-cyl. Engine Illustrated



LIFTING CAUTION
Never lift truck with frame contact hoist

● Cooling system drain

CRANKCASE

CRANKCASE		"MS" MO
Above +32°	30	20W-40,10W-30
Above +10°	20W	10W-30
Above -10°	10W	10W-30,5W-20
Below -10°		5W-20

CAPACITY 6-cyl., 5 quarts; 8-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash and oil 30 **MO** **OC**
Some at rear. 8-cyl., left side center

Distributor Shaft (oil cup) .... **MO** **12**
8-cyl., rear center
Wick under rotor .... **MO** **12**

Oil Filter .... Replace **8**
Add extra quart oil

PCV System .... Check **4**
Check system. Clean hose and carburetor passages if clogged. California vehicles, disassemble and clean valve with CC or, if clogged, replace; also service oil fill cap. Others, replace valve if clogged or at least once a year. Do not clean
Some located forward

TRANSMISSION, Automatic .. AF

Check level, engine idling and thoroughly warm, NEUTRAL position .... ★
To overcome difficult starting below -10°, replace 1 quart fluid with kerosine. Do not dilute more than once during any one season

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	9

DRAIN and REFILL **32**
Remove 1 converter plug and transmission drain plug
Drain more frequently under severe service
Replace internal filter at time of transmission drain

Front Wheel Bearings .... Check **WB** **C**
Check whenever brake drum is removed. Clean and repack as necessary
Tighten nut to 50 ft. lb. while rotating wheel, back off nut ⅛ to ¼ turn, install cotter key

Battery .... Test and Fill ★

BRAKE ADJUSTMENT

Brakes are self-adjusting. No adjustment normally required
Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 2,000 miles
4 Every 4,000 miles
8 Every 8,000 miles
12 Every 12,000 miles
20 Every 20,000 miles
24 Every 24,000 miles
32 Every 32,000 miles
OC Every crankcase oil change
TY Twice yearly
C Conditional service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A, Suffix A
CC	Carburetor Cleaner
CL	Chassis Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease
MH	Manifold Heat Control Valve Solvent MoPar Part No. 1879318
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant Meeting MIL-L-2105 or MIL-L-2105B
PO	Penetrating Oil
UJ	Universal Joint Grease
WB	Wheel Bearing Grease

* Full-Traction, use MoPar Rear Axle Lubricant Part No. 2585318

FORD TRUCKS

1961-64 F-100, P-100
1965 P-100

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
1961	29NF	55
	27F	70
1962-63	22NF	40
	29NF	55
1964	29NF	55
	27F	70
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
144 engine	150-190
170 engine	155-195
Others	130-170

Maximum variation between cylinders, 20 psi

SPARK PLUGS

Autolite: 144, 170 engs. BF82; 223 eng. BTF6; 262 eng. BTF3 light duty, BTF31 heavy duty; 292 eng. BTF6 light duty, BTF31 heavy duty
Gap: BF82 .032"-.036"; others .028"-.032"
Torque: 15-20 ft. lb.

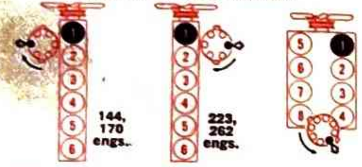
IGNITION POINTS

FoMoCo
Gap: 6-cyl., .024"-.026"; V-8, .014"-.016"
Dwell angle: 6-cyl., 35°-38°; V-8, 26°-28½°

CONDENSER

FoMoCo Capacity: .21-.25 mfd

Cylinder Numbering Sequence

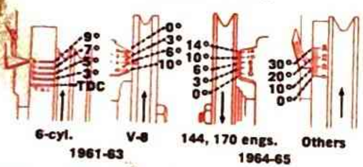


Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4 V-8 1, 5, 4, 8, 6, 3, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1961-62: 6-cyl. 6° (2°-11°); V-8, 8° (2°-13°)
1963: 6-cyl. 4° (2°-9°); V-8, 6° (2°-11°)
1964: 6-cyl. 262 2°*, others 4°*; V-8 6°*
1965: 6-cyl.: Man. Trans. 4°*; Auto. Trans. 8°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial timing advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1961-64, 3½-5½ lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	HOLLEY	Idle Mixture (initial turns)
1-bbl.	1-1½	1-bbl.	1-1½
2-bbl.	1-1½		

ENGINE IDLE SPEED

Manual Trans.
6-cyl.: 1961-62, 500-550 rpm; 1963, 500-525 rpm; 1964, 144 engine, 575-600 rpm, 223, 262 engines, 525-550 rpm; 1965, 575-600 rpm*
V-8, 500-550 rpm
Auto. Trans. in DRIVE
6-cyl.: 1961-62, 475-525 rpm; 1963, 223 engine, 500-525 rpm, 262 engine, 475-525 rpm; 1964, 223 engine, 525-550 rpm; 1965, 500-525 rpm*
V-8, 475-525 rpm
Air Cond.: Same rpm as listed, with unit turned ON and in operation for 20 minutes
* Headlights ON and air conditioner operating

VALVE CLEARANCES

(engine hot and running)
6-cyl.: 144, 170 engines, In. .018"; ex. .018"
223, 262 engines, In. .019"; ex. .019"
V-8: Intake .018"; exhaust .018"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

COOLING SYSTEM	Quarts Without Heater	
1965 170-cu. in. engine		17¾
	1961-63	1964
6-cyl. F-100	18	13½
262-cu. in. engine	...	20
P-100	18½	18½
144-cu. in. engine	9	9
8-cyl.	21	16½

Cooling system pressure, 7 pounds

Fuel Filter Element..................Replace
8 1961-62 **4** 1963 **36** 1965
36 1964 144-, 262-cu. in. engs. **6** 1964 Others
If equipped, clean glass bowl and magnetic filter
Right side on 6-cyl. except 144-, 170-cu. in. engines

PCV System Valve (if equipped).......Service
4 1961-63 ....Clean
6 1964 ....Clean
12 1965 ....Replace
Also clean all parts
1961-63 6-cyl., left side; 1964-65, top of valve cover

Air Cleaner Element..................Service
4 Dry type ....Clean
24 Dry type ....Replace
Oil bath..................Wash and fill **MO**
Above +32°, 30; below +32°, 20
4 1961-63, 1965 **6** 1964

Oil Filter (under truck)..................Replace
Add extra quart oil. 6-cyl., right side forward
4 1961-63, 1965 **6** 1964

Steering Gear (plug)..........................**SG**
P-100, forward ....90 **HP**
★ 1961-62, 1964-65 **4** 1963

4 **Clutch Master Cylinder** (cap or plug).......**HB**
Fill to ½ inch below top of fill hole. P-100 only

4 **Brake Master Cylinder** (cap or plug).........**HB**
Fill to ½ inch below top of fill hole

★ LUBRICATION FITTINGS (•)..CL

Fittings shown by (○) are not found on every model

Springs ....Coat **PO**
8 1961-62 **C** 1963-65

24 **Speedometer Cable** ....Coat **SP**

TRANS., Manual......."MS" MO, GL

Above +10°, 50 or 90; below +10°, 30 or 80
★ Maintain level to fill plug hole
CAPACITY 3-speed light-duty, 2¾ pints, with extension housing, 3½ pints, with overdrive, 3¼ pints; 3-speed medium-duty, 3½ pints; 4-speed, 8 pints
DRAIN and REFILL
10 1961 **24** 1962-65
Overdrive, check level and drain thru separate plug hole. Fill slowly thru transmission

DIFFERENTIAL ....90 HP*

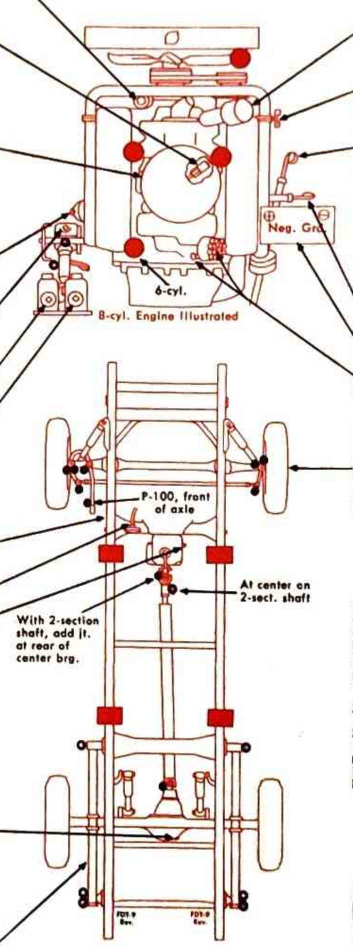
Below -25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints; Spicer 60-2, 6 pints
10 **DRAIN and REFILL** Not recommended, except 1961-62 Limited-Slip
LIMITED-SLIP IDENTIFICATION:
By letter-number appearing under axle listing on plate inside glove box door or on door pillar

Springs P-100 only..................Coat **PO**
8 1961-62 **C** 1963-65

GAS TANK

GAS TANK	Gallons
Frame mounted	17
Cab mounted	18

Chek Chart



Neg. Grd.
6-cyl.
8-cyl. Engine Illustrated
P-100, front of axle
At center on 2-sect. shaft
With 2-section shaft, add it. at rear of center brg.
FDT-9 Rev.
FDT-9 Rev.

🟥 Position for lift adapter
● Cooling system drain

CRANKCASE

CRANKCASE		"MS" MO
Above +90°	40	20W-40
Above +32°	30	10W-30
Above +10°	20,20W	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 5 quarts except 144-, 170-cu. in. engines, 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap..........................Wash
6-cyl., top of valve cover
1961-63, 1965 **4** 1964 **6**

Manifold Heat Control Valve.............**MH**
Lubricate if shaft is not free. 6-cyl., left side
1961-62, 1965 ★ 1963 **4** 1964 **6**

TRANSMISSION, Automatic..FA

Check level, engine idling, PARK position
1961-64 **4** 1965 ★

CAPACITY, quarts	Initial Refill	Total Refill
1961-63	5	10
1964 8-cyl.	5	10
6-cyl.	5	9
1965 6-cyl.	5	9

DRAIN and REFILL Not recommended
Remove 2 converter plugs, disconnect fill pipe

Crankcase Dipstick..............Check level
6-cyl. left side except early 1961 P-100

Battery..........................Test and fill ★
P-100, located inside right frame member

Distributor Shaft (oil cup)...........10W **MO**
6-cyl., forward
Wick under rotor 8-cyl...Sparingly 10W **MO**
Shaft and Wick 1961-62 **4** 1963-64 **8** 1965 ★

Front Wheel Bearings............Repack **WB** **24**
To adjust, tighten nut until wheel drag is felt
Back off ⅙ to ¼ turn, then lock in nearest slot
Off-highway operation every 12,000 miles

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than halfway with power brakes, engine running, the need for service is indicated
1961-63
Adjust the brakes as follows:
1. Expand the shoes until a slight drag is felt when turning the brake drum
2. Back off the adjustment 10-12 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

1964-65: Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake cylinder first

KEY TO INTERVALS

★ Every 1,000 miles
4 Every 4,000 miles
6 Every 6,000 miles
8 Every 8,000 miles
10 Every 10,000 miles
12 Every 12,000 miles
24 Every 24,000 miles
36 Every 36,000 miles
C Conditional service
Coat front and rear springs as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specs. No. M2C28-B, 90; -A, 80
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
PO	Penetrating Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SP	Speedometer Cable Lubricant Specification No. M1C18
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Limited-Slip, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD TRUCKS

1961-64 F-250, F-350, P-350
1965 F-350, P-350

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1961	29NF	55
	27F	70
1962-63	22NF	40
	29NF	55
1964	29NF	55
	27F	70
1965	22HF	45
	24F	55
	27HF	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)

	psi
1961-64: All	130-170
1965: 300 6-cyl.	150-200
352 V-8	160-200

Maximum variation between cylinders, 20 psi

SPARK PLUGS

Autolite: 223 eng. BTF6; 262 eng. BTF3 light duty, BTF31 heavy duty; 292 eng. BTF6 light duty, BTF31 heavy duty; 300LD, BTF42; 300HD, BTF31; 352, BF42
Gap: .028"-.032", except BTF42, BF42, .032"-.036"
Torque: 15-20 ft. lb.

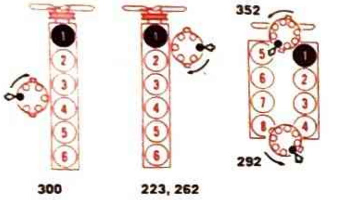
IGNITION POINTS

FoMoCo
Gap: 6-cyl., .024"-.026"; V-8, .014"-.016"
Dwell angle: 6-cyl., 35°-38°; V-8, 26°-28½°

CONDENSER

FoMoCo Capacity: .21-.25 mfd

Cylinder Numbering Sequence

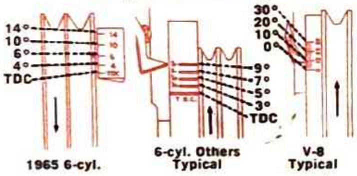


Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4; 352 V-8 1, 5, 4, 2, 6, 3, 7, 8
Other V-8 1, 5, 4, 8, 6, 3, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer and timing light
3. Disconnect distributor vacuum line
4. Set idle speed with transmission in NEUTRAL
5. Observe timing at crankshaft damper
6. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
1961-62: 6-cyl. 6° (2°-11°); V-8, 8° (2°-13°)
1963: 6-cyl. 4° (2°-9°); V-8, 6° (2°-11°)
1964: 223 eng. 4°*; 262 eng. 2°*
1964-65: V-8, 6°*
1965: 6-cyl. Man. Trans. 6°*; Auto. Trans. 10°*
* Do not alter timing to exceed 5° above normal setting (without detonation) or retard beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 1961-64, 3½-5½ lb. at 500 rpm. 1965 6-cyl. 4-6 lb.; V-8 4.5-6.5 lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm, except 352 eng., 20 seconds

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)	HOLLEY	Idle Mixture (initial turns)
1-bbl.	1-1½	1-bbl.	1-1½
2-bbl.	1-1½		

ENGINE IDLE SPEED

Manual Trans.
6-cyl.: 1961-62, 500-550 rpm; 1963, 500-525 rpm; 1964, 525-550 rpm; 1965, 500-525 rpm*
V-8, 500-550 rpm; 1965, 550-575 rpm*
Auto. Trans. in DRIVE
6-cyl.: 1961-62, 475-525 rpm; 1963, 223 eng. 500-525 rpm, 262 eng. 475-525 rpm; 1964, 223 eng. 525-550 rpm; 1965, 500-525 rpm*
V-8, 475-525 rpm; 1965, 475-500 rpm*
Air Cond.: Same rpm as listed, with unit turned ON and in operation for 20 minutes
* Headlights ON, air conditioner in operation

VALVE CLEARANCES

(engine hot and running)
1961-64: 6-cyl. Intake .019"; exhaust .019"
V-8, Intake .018"; exhaust .018"
1965: 6-cyl., V-8, Hydraulic lifters

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	Without Heater 6-cyl.	Without Heater 8-cyl.
1961: F-250, F-350	18	21*
1962-64; F-250, F-350	13½*†	16½*
P-350	18½	22*
1965: F-350	19	27
P-350	19	...

* F-350 with dual rear wheels, 6-cyl., 18; 8-cyl., 22
P-350 with dual rear wheels, 23
† 262-cu. in. engine, 20
Cooling system pressure, 7 pounds

Fuel Filter Element .... Replace
8 1961-62 **4** 1963 **36** 1965
36 1964 262-cu. in. eng. **6** 1964 Others
If equipped, clean glass bowl and magnetic filter
6-cyl., right side

PCV System Valve (if equipped) .... Service
4 1961-63 .... Clean
6 1964 .... Clean
12 1965 .... Replace
Also clean all parts
1961-63 6-cyl., left side; 1964, top of valve cover
1963-64 8-cyl., rear, under air cleaner; 1965, top of right valve cover

Air Cleaner Element .... Service
4 Dry type .... Clean
24 Dry type .... Replace
Oil bath .... Wash and fill **MO**
Above +32°, 30; below +32°, 20
4 1961-63, 1965 **6** 1964

Oil Filter (under truck) .... Replace
Add extra quart oil. 6-cyl., right side forward except 1965, left rear. 1965 8-cyl., left front
4 1961-63, 1965 **6** 1964

★ **Steering Gear** (plug) 350 series .... 90 **HP**
P-350, reach under left fender
4 250 series .... **SG**

4 **Clutch Master Cylinder** (cap or plug) .... **HB**
Fill to ½ inch below top of fill hole
Reach thru access hole or under truck. P-350 only

4 **Brake Master Cylinder** (cap or plug) .... **HB**
Fill to ½ inch below top of fill hole
P-350, reach thru floor

★ LUBRICATION FITTINGS (•) .. CL

Fittings shown by (○) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows

Springs Front and rear .... Coat **PO**
8 1961-62 **C** 1963-65

24 **Speedometer Cable** .... Coat **SP**

TRANS., Manual .... "MS" MO, GL

Above +10°, 50 or 90; below +10°, 30 or 80
★ Maintain level to fill plug hole
CAPACITY 3-sp. light-duty or medium-duty, 3½ pints; 3-sp. heavy-duty, 5½ pints; 4-sp., 8 pints except New Process, 6½ pints
DRAIN and REFILL
10 1961 **24** 1962-65

Hydrovac Cylinder .... **VO**
Fill to plug level in end plate. Some 350 series
8 1961-62 **C** 1963 **12** 1964

8 **Hydrovac Air Cleaner Element** .... 10W **MO**
Wash and oil

24 **Rear Wheel Bearings** .... Repack **WB**
Necessary to remove axle shafts

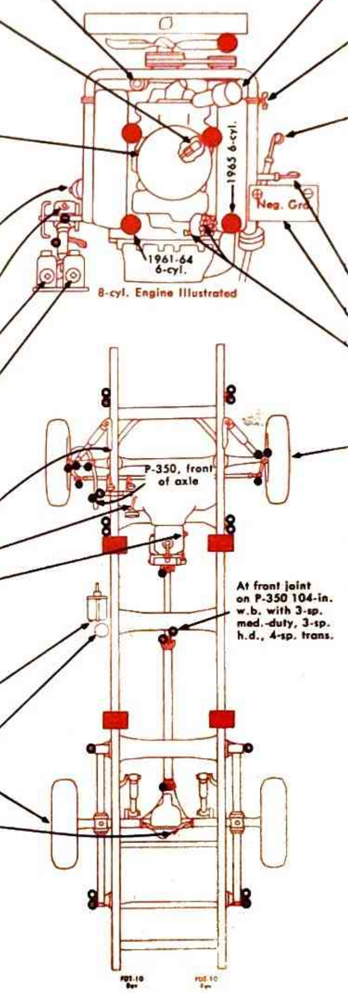
DIFFERENTIAL .... 90 HP*

Below -25°, use 80 grade
★ Maintain level to fill plug hole
Some models, plug forward
CAPACITY 1961-62, **6 pints** except F-350; P-350 optional axle, **11 pints.** 1963-65, **6 pints** except 1964-65 F-350; P-350 optional axle, **5 pints**
DRAIN and REFILL
10 1961 **32** 1962-65
LIMITED-SLIP IDENTIFICATION:
By B4, B6 appearing under axle listing on plate inside glove box door or on door pillar

GAS TANK .... Gallons

	Gallons
F-250, F-350	18
Without cab	17
P-350, mounted inside frame	17
Mounted outside frame	30

Chek Chart


1963 6-cyl.
Neg. Grd
1961-64 6-cyl.
8-cyl. Engine Illustrated
P-350, front of axle
At front joint on P-350 104-in. w.b. with 3-sp. med.-duty, 3-sp. h.d., 4-sp. trans.

🟥 Position for lift adapter
● Cooling system drain

CRANKCASE .... "MS" MO

Above +90°	40	20W-40
Above +32°	30	10W-30
Above +10°	20,20W	10W-30
Above -10°	10W	10W-30
Below -10°	5W	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash
6-cyl., top of valve cover. 1965 8-cyl., on left valve cover, forward
1961-63, 1965 **4** 1964 **6**

Manifold Heat Control Valve .... **MH**
Lubricate if shaft is not free. 1961-64 6-cyl. and 1965 8-cyl., left side
1961-62, 1965 ★ 1963 **4** 1964 **6**

TRANSMISSION, Automatic .. FA

Check level, engine idling, PARK position
1961-64 **4** 1965 ★

CAPACITY, quarts	Initial Refill	Total Refill
1961-63	5	10
1964-65 8-cyl.	5	10
6-cyl.	5	9

DRAIN and REFILL Not recommended
Remove 2 converter plugs, disconnect fill pipe

Crankcase Dipstick .... Check level
6-cyl. and 1965 8-cyl., left side

Battery .... Test and fill ★

Distributor Shaft (oil cup) .... 10W **MO**
6-cyl., forward, 1965 left center. 1965 8-cyl., front center
Wick under rotor 8-cyl. .. Sparingly 10W **MO**
Shaft and Wick 1961-62 **4** 1963-64 **6** 1965 [illegible]

Front Wheel Bearings .... Repack [illegible]
To adjust, tighten nut until wheel drag is felt
Back off ⅙ to ¼ turn, then lock in nearest slot
Off-highway operation, every 12,000 miles

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than halfway with power brakes, engine running, the need for service is indicated
Adjust the brakes as follows:
1. Expand the shoes until a slight drag is felt when turning the brake drum
2. Back off the adjustment 10-12 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF If equipped, bleed power brake cylinder first

KEY TO INTERVALS

Note: 1965 F-350, for light-duty operation, extend 4,000 miles to 6,000; 8,000 to 12,000

★ **Every 1,000 miles**
4 **Every 4,000 miles**
6 **Every 6,000 miles**
8 **Every 8,000 miles**
10 **Every 10,000 miles**
12 **Every 12,000 miles**
24 **Every 24,000 miles**
32 **Every 32,000 miles**
36 **Every 36,000 miles**
C **Conditional service**
Coat front and rear springs as required
Fill hydrovac cylinder as required

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specs. No. M2C28-B, 90; -A, 80
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
PO	Penetrating Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SP	Speedometer Cable Lubricant Specification No. M1C18
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Limited-Slip, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

FORD TRUCKS

1965 F-100, F-250

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	22HF	45
	24F	55
	27HF	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
240 engine (6-cyl.)	150-200
352 engine (V-8)	160-200

Maximum variation between cylinders, 20 psi

SPARK PLUGS

Autolite: 6-cyl. BTF6; V-8 BF42
Gap: .032"-.036"
Torque: 15-20 ft. lb.

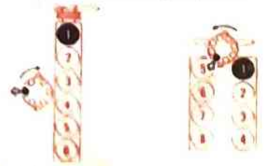
IGNITION POINTS

FoMoCo
Gap: 6-cyl. .024"-.026"; V-8 .014"-.016"
Dwell angle: 6-cyl. 35°-38°; V-8 26°-28½°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

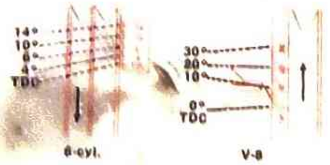


Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 5, 4, 2, 6, 3, 7, 8

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft damper and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
6-cyl.: Manual Trans. 6°*; Auto. Trans. 10°*
V-8: 6°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP

AC mechanical
Pressure: 6-cyl. 4-6 lb.; V-8 4.5-6.5 lb., at 500 rpm
Volume: 6-cyl. 1 pt. in 30 seconds; V-8 1 pt. in 20 seconds, at 500 rpm

CARBURETOR ADJUSTMENT

♦	Idle Mixture (initial turns)
FORD	
1 bbl	1-1½
2 bbl	1-1½

ENGINE IDLE SPEED

Manual Trans.
6-cyl. 500-525 rpm*; V-8 550-575 rpm*
Auto. Trans.
6-cyl. 500-525 rpm*; V-8 475-500 rpm* in DRIVE
Air Cond.: Same rpm as listed, with unit turned ON and in operation for 20 minutes
* Headlights ON and air conditioner operating

VALVE CLEARANCES

Hydraulic lifters nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	Without Heater 6-cyl.	Without Heater 8-cyl.
All models	19	27

Cooling system pressure, 7 pounds

36 **Fuel Filter Element** .... Replace

★ **Oil Fill Cap** .... Wash
6-cyl., top of valve cover

★ **Oil Filter** (under truck) .... Replace
Add extra quart oil. 6-cyl., left rear

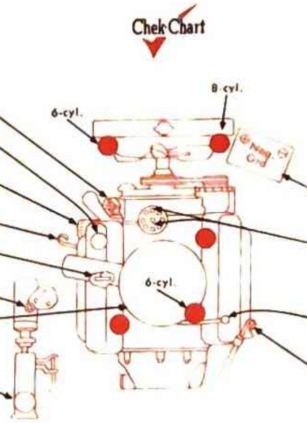
Crankcase Dipstick .... Check level

★ **Manifold Heat Control Valve** .... MH
Lubricate if shaft is not free. 6-cyl., right side

★ **Steering Gear** (plug) .... SG

Air Cleaner Element .... Service
★ Oil bath .... Wash and fill MO
Above +32°, 30; below +32°, 20

★ **Brake Master Cylinder** (cap) .... HB
Fill to ½ inch below top of fill hole



CRANKCASE

	"MS"	MO
Above +90°	40	20W-40
Above +32°	30	10W-30
Above +10°	20,20W	10W-30
Above −10°	10W	10W-30
Below −10°	5W	5W-20

CAPACITY 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★

Distributor Shaft (oil cup) .... 10W MO ★
6-cyl., left side
Wick under rotor 8-cyl. .... Sparingly 10W MO ★

PCV System Valve (if equipped) .... Replace **18**
Disassemble and clean all parts, also exhaust line

TRANSMISSION, Automatic .FA

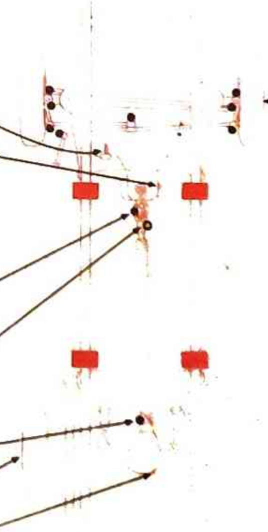
★ Check level, engine idling, PARK position

CAPACITY, quarts	Initial Refill	Total Refill
6-cyl.	5	9
8-cyl.	5	10

DRAIN and REFILL Not recommended
Remove 2 converter plugs, disconnect fill pipe

★ LUBRICATION FITTINGS (•) .. LM

Fittings shown by (O) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows



24 **Speedometer Cable** .... Coat SP

TRANS., Manual ...... "MS" MO, GL

Above +10°, 50 or 90; below +10°, 30 or 80
★ Maintain level to fill plug hole
CAPACITY 3-speed light duty 2¾ pints, with overdrive 3¼ pints; 3-speed medium duty 3½ pints, 4-speed, Warner 8 pints, New Process 6½ pints
24 DRAIN and REFILL
Overdrive, check level and drain thru separate plug hole. Fill slowly thru transmission

★ **Universal Joint** .... UJ
Models with 2-section propeller shaft, additional joint at rear of center bearing

★ **Universal Joint Spline** CL
On models with 3-speed medium duty and 4-speed transmissions; others, no lubrication. At center joint with 2-section propeller shaft

★ **Universal Joint** .... UJ

24 **Rear Wheel Bearings** F-250 .... Repack WB
Necessary to remove axle shafts

DIFFERENTIAL .... 90 HP•

Below −25°, use 80 grade
★ Maintain level to fill plug hole
CAPACITY 4½ pints except Spicer 60-2, 6 pints
DRAIN and REFILL
12 F-250
F-100 Not recommended
LIMITED-SLIP IDENTIFICATION:
By letter-number appearing under axle listing on plate inside glove box door or on door pillar

Front Wheel Bearings .... Repack WB **24**
To adjust, tighten nut until wheel drag is felt. Back off ⅙ to ¼ turn, then lock in nearest slot

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than halfway with power brakes, engine running, the need for service is indicated. Adjust the brakes as follows:

1. Expand the shoes until a slight drag is felt when turning the brake drum
2. Back off the adjustment 10-12 notches. Drum should turn freely without drag
3. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF. If equipped, bleed power brake cylinder first.
F-100 brakes are self-adjusting. Adjustment is not normally required

GAS TANK

	Gallons
Frame-mounted	17
Cab-mounted	18

🟥 Position for lift adapter
● Cooling system drain

KEY TO INTERVALS

★ Every 6,000 miles
12 Every 12,000 miles
18 Every 18,000 miles
24 Every 24,000 miles
36 Every 36,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL Chassis Lubricant

FA Ford Automatic Transmission Fluid
Specification No. M2C33-D

GL Straight Mineral Gear Lubricant

HB Hydraulic Brake Fluid, Heavy Duty SAE 70R1

HP• Hypoid Gear Lubricant
Specs. No. M2C28-B, 90; -A, 80
F-100: Spec. No. ESW-M-2C50-A

LM Lithium Grease, with Moly
Spec. No. ESA-M-1C47-A or 1C75-A

MH Manifold Heat Control Valve Solvent
Specification No. M-99C2

MO Motor Oil

SG Steering Gear Lubricant
Specification No. ESW-M-1C87-A

SP Speedometer Cable Lubricant
Specification No. M-1C8

UJ Universal Joint Grease
Specification No. ESA-M-1C67-A

WB Wheel Bearing Grease
Specification No. ESA-M-1C60-A

• Limited-slip, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive Spec. No. ESW-M-2C58-A per pint of lubricant

FORD ECONOLINE

1961-63 All Models Including Falcon Station Bus, Club Wagon

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	22NF 24F	40 55

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min.	max.
All	150	190

Maximum variation between cylinders, 10 psi

SPARK PLUGS

Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket with tapered seat plugs

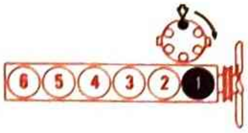
IGNITION POINTS

FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER

FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence

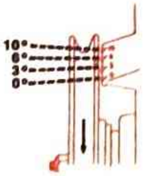


Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center): 4° (Allowable range, 2°-9°)

FUEL PUMP

AC mechanical
Pressure: 3½-5½ lb. at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
FORD	
1-bbl.	1-1½
HOLLEY	
1-bbl.	1-1½

ENGINE IDLE SPEED

525-575 rpm

VALVE CLEARANCES

(engine hot and running)
Intake .018"; exhaust .018"

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM . . . . . . Quarts	With Heater	Without Heater
1961	10¾	8¾
1962-63	10½	9

Cooling system pressure, 13-15 pounds

Oil Filter (under truck) . . . . Replace
Add extra quart oil
[4] 1961-62 [6] 1963

Distributor Shaft (oil cup) . . Sparingly 10W **MO**
Reached under truck
[12] 1961 [8] 1962-63

Crankcase Dipstick . . . . Check level

[4] **Battery** . . . . Test and fill

[8] **Fuel Pump Sediment Bowl and Screen** . . . . Clean
1961, reached from under truck

[8] **Fuel Filter** . . . . Replace
1961, right side, forward of carburetor

★ **LUBRICATION FITTINGS** (•) . . CL
Fittings shown by (O) are not found on every model

★ **Steering Gear** (plug) . . . . SG
Plug reached thru opening in toeboard

[12] **Speedometer Cable** . . . . Coat sparingly SP

★ **Shift Control Rod Bushings** CL
Coat rods at front and rear of bushings

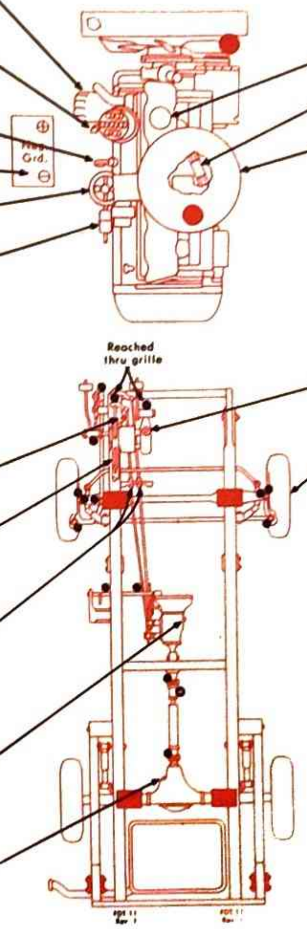
TRANSMISSION . . . . 80 EP
[4] Maintain level to fill plug hole
CAPACITY 1961-62, 2½ pints; 1963, 3 pints
[24] DRAIN and REFILL

DIFFERENTIAL . . . . 90 HP
Below -25°, use 80 grade
★ Maintain level to fill plug hole
Heavy-duty axle, fill plug at rear
CAPACITY 2½ pints; Heavy-duty, 5 pints
DRAIN and REFILL Not recommended

GAS TANK	Gallons
All models	14

TIRES . . . . Pressure	Front	Rear
6.50-13	28	28
7.00-13	28	30

[4] Rotate tires, Method A, then balance wheels
More often under severe operation



CRANKCASE	"MS" MO
Above -10°	10W-30
Below -10°	5W-20

CAPACITY 3½ quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap . . . . Wash [4]

PCV System Valve . . . . Clean [4]
Disassemble and clean all parts; also, exhaust line

Air Cleaner Element . . . . Service
Dry type . . . . Clean [4]
Dry type . . . . Replace [24]
Every 12,000 to 18,000 miles, extreme dust or sand
Oil bath . . . . Wash and fill **MO**
Above +32°, 30; below +32°, 20
1962 [4] 1963 [6]

Brake Master Cylinder (plug) . . . . HB [4]
Fill to ½ inch below top of reservoir
Reached thru plug hole in floorboard

Front Wheel Bearings . . . . Repack **WB**
1961 [12] 1962-63 [24]

1961-62, initial torque, 11½-12½ ft. lb., while rotating wheel; final adjustment, loosen ⅛ but not more than ⅓ turn
1963, initial torque, 12-15 ft. lb.; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, two castellations and install cotter pin

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than halfway, the need for service is indicated

Adjust the brakes as follows:

1. Disconnect parking brake cable at equalizer
2. Expand shoes until a moderate drag is felt when turning wheel
3. Back off adjustment 10 notches to permit wheel to rotate freely
4. Repeat procedure at each wheel
5. Reconnect parking brake and adjust

Bleeding sequence: RR, LR, LF, RF

🟥 Position for lift adapter
● Cooling system drain

KEY TO INTERVALS

★ Every 1,000 miles
[4] Every 4,000 miles
[6] Every 6,000 miles
[8] Every 8,000 miles
[12] Every 12,000 miles
[24] Every 24,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

CL	Chassis Lubricant
EP	Mild Extreme Pressure Gear Lubricant Specification No. ESW-M-2C83-A
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
SP	Speedometer Cable Lubricant Specification No. M1C18
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

FORD ECONOLINE

1964-65 All Models Including Falcon Station Bus, Club Wagon

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
1964	22NF	40
1965	22HF	45
	24F	55

COMPRESSION PRESSURE

(psi at cranking speed, throttle open)	min. max.
1964: 144, 170 engines	150-190
1965: 170, 200 engines	155-195
240 engine	150-200

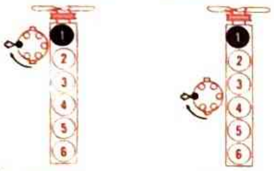
Maximum variation between cylinders, 20 psi

SPARK PLUGS
Autolite BF82
Gap: .032"-.036"
Torque: 15-20 ft. lb.
Do not use gasket with tapered seat plugs

IGNITION POINTS
FoMoCo
Gap: .024"-.026"
Dwell angle: 35°-38°

CONDENSER
FoMoCo
Capacity: .21-.25 mfd

Cylinder Numbering Sequence



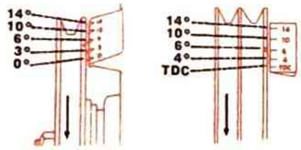
144, 170 200 engs.

240 eng.

Firing Order: 1, 5, 3, 6, 2, 4

TIMING PROCEDURE
1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line
5. Set idle speed with transmission in NEUTRAL
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



1964

1965

Timing Setting (Before Top Dead Center):
1964: 144, 170 engs., Man. Trans. 4°*; Auto. Trans. 8°*
1965: 170 eng., Man. Trans. 4°; Auto. Trans. 8°*
200 eng., Man. Trans. 6°*; Auto. Trans. 10°*
240 eng., Man. Trans. 6°*; Auto. Trans. 8°*

* For optimum performance and economy, timing may be advanced to a point just short of audible detonation under road test load but not to exceed 5° over normal setting. Do not retard initial advance beyond 2° BTDC

FUEL PUMP
AC mechanical
Pressure: 1964, 3½-5½ lb.; 1965, 4-6 lb.; at 500 rpm
Volume: 1 pint in 30 seconds at 500 rpm

CARBURETOR ADJUSTMENT

FORD	Idle Mixture (initial turns)
1-bbl.	1-1½

ENGINE IDLE SPEED
Manual Trans.: 144, 170, 200 engs., 575-600 rpm*
240 eng., 500-525 rpm*
Auto. Trans.: 1964, 550-575 rpm; 1965, 500-525 rpm*; in DRIVE
Air Cond.: As listed above but with unit turned ON and in operation for 20 minutes
* 1965, Headlights ON

VALVE CLEARANCES
(engine hot and running)
144, 170 engs.: intake .018"; exhaust .018"
200, 240 engs.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	With Heater	Without Heater
All models	9½	8½

Cooling system pressure, 12-15 pounds

★ **Oil Filter** (under truck) .... Replace
Add extra quart oil
At rear on 240-cu. in. engine

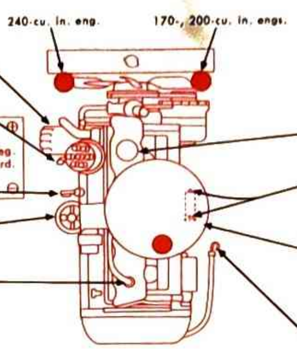
12 **Distributor Shaft** (oil cup) .. Sparingly 10W **MO**
Reached under truck

Battery .... Check and fill
Check level monthly

Crankcase Dipstick .... Check level

36 **Fuel Filter** .... Replace
Forward on 240-cu. in. engine

PCV System .... Service
★ Valve Early 1964 .... Clean
12 Others, jiggle-pin type .... Replace
C All other parts ...... Disassemble and clean
Continuous stop-and-go operation, every 2,000 miles or 2 months; extremely dusty conditions, every 1,000 miles or monthly



★ **Steering Gear** (plug) .... **SG**
Plug reached thru opening in toeboard

★ **LUBRICATION FITTINGS** (•) .. **LM**
Fittings shown by (○) are not found on every model

★ **Shift Control Rod Bushings** .... **LM**
Coat rods at front and rear of bushings

TRANSMISSION, Manual .. 80 **EP**
★ Maintain level to fill plug hole
CAPACITY 3-speed, 3 pints; 4-speed, 4½ pints
24 **DRAIN and REFILL**

DIFFERENTIAL .... 90 **HP***
Below –25°, use 80 grade
★ Maintain level to fill plug hole
Heavy-duty axle, fill plug at rear
CAPACITY 2½ pints; Heavy-duty, 5 pints
DRAIN and REFILL Not recommended
EQUA-LOCK IDENTIFICATION:
Axle model indicated by a letter on patent plate at driver's door

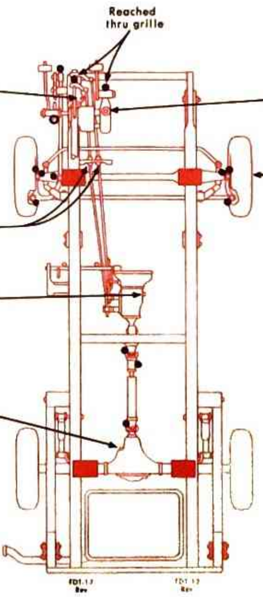
GAS TANK .... Gallons

All models	14

TIRES ... Pressure	Front	Rear
6.50-13, 6.95-14	28	28
7.00-13	30*	30*
7.00-14	28**	28**
6.95-14 8-ply	36	36
7.35-14 8-ply	44	44

* 8-ply truck type, front 35, rear 45
** 6-ply pass. car type, 30; 8-ply truck type, 1964 35, 1965 45

C Rotate tires, Method A, then balance wheels as required



CRANKCASE .... "MS" **MO**

Above –10°	10W-30
Below –10°	5W-20

CAPACITY 3½ quarts except 1965 240-cu. in. engine, 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Fill Cap .... Wash ★

Manifold Heat Control Valve .... **MH** C
1965 240-cu. in. engine only
Lubricate if shaft is not free

Air Cleaner .... Service
Oil bath .... Wash and fill **MO** ★
Above +32°, 10W-30; below +32°, 5W-20

TRANSMISSION, Automatic .. **FA**
Check level, fluid warm, engine idling, in PARK ★

CAPACITY, quarts	Initial Refill	Total Refill
1965 with 240-cu. in. engine	4	10½*
All others	4	7½*

*Dry capacity shown, fill only to FULL mark
DRAIN and REFILL Not recommended
Remove 2 converter plugs. With 240-cu. in. engine, also disconnect fill tube; others, remove oil pan

Brake Master Cylinder (plug) .... **HB** ★
Fill to 1 inch below top of filler opening
Reached thru plug hole in floorboard

Front Wheel Bearings .... Repack **WB** 24
Repack on mileage basis only
Initial torque, 15-20 ft. lb., while rotating wheel; then with nut-lock on spindle nut and castellation aligned with hole in spindle, back off both nut and nut-lock together, one castellation and install cotter pin

BRAKE ADJUSTMENT

Self-adjusting brakes are used. Adjustment is not normally required. If the brakes have been relined or the adjustment disturbed, adjust the brakes as follows:

1. Expand shoes until a slight drag is felt when turning drums
2. Remove drums and mark tooth on star wheel contacted by adjusting lever
3. Hold adjusting lever away from star wheel and back off adjusting screw ¾ turn with finger pressure only. If adjusting screw does not turn easily, remove and lubricate
4. Reinstall drums, wheels and backing plate adjusting hole cover
5. Operate car in reverse and apply brakes several times to bring shoes into proper adjustment

Bleeding Sequence: RR, LR, RF, LF

🟥 Position for lift adapter
● Cooling system drain

KEY TO INTERVALS

★ Every 6,000 miles or 6 months
12 Every 12,000 miles or 12 months
24 Every 24,000 miles or 2 years
36 Every 36,000 miles or 3 years
C Conditional service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

EP	Mild Extreme Pressure Gear Lubricant Specification No. ESW-M-2C83-A
FA	Ford Automatic Transmission Fluid Specification No. M2C33-D
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
HP*	Hypoid Gear Lubricant Specification No. ESW-M-2C50-A
LM	Lithium Grease, with Moly Specification No. ESA-M-1C47-A or ESA-M-1C75-A
MH	Manifold Heat Control Valve Solvent Specification No. M-99C2
MO	Motor Oil
SG	Steering Gear Lubricant Specification No. ESW-M-1C87-A
WB	Wheel Bearing Grease Specification No. ESA-M-1C60-A

* Equa-Lock, use Spec. No. ESW-M-2C50-A and add 1 oz. of additive, Spec. No. ESW-M-2C58-A, per pint of lubricant

GMC TRUCKS

1955-59 Blue Chip Series 100, 150
1960-62 Forward Control Series P1500
1963-65 Forward Control Series P-, PB1500

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All 1955-59 Blue Chip Series	24	53
1960-65 Forward Control Series	24	53, 61
Optional, All	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
6-cyl. 230, 292 engines	130
248, 270 engines	125
V-8 288 engine	115-125
316 engine	120-130
336, 347 engines	125

SPARK PLUGS

AC: 6-cyl. 248, 270 C44; 230 46N; 292 C42N
V-8: 1955, C44; 1956, C46; 1957-59, C45
Gap: 6-cyl. 248, 270 .030"; 230, 292 .035"
V-8: .035"
Torque: 23-27 ft. lb.

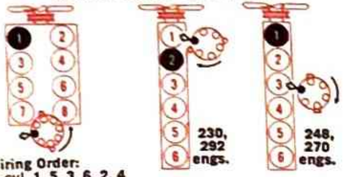
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 6-cyl., 1955 38°-45°; 1956-62 28°-35°; 1963-65 31°-34°
V-8 1955-56 26°-33°, 1957-59 28°-32°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



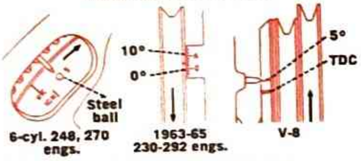
Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
V-8 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect timing light to No. 1 spark plug or distributor cap tower. On 230 engine, use No. 2 spark plug or cap tower
   230, 292 engs.: Disconnect distributor vacuum line and tape manifold opening
3. Set idle speed to lowest rpm at which the engine will run smoothly
4. Observe timing mark at flywheel or crankshaft* damper and turn distributor to obtain recommended setting
   230, 292 engs.: Reconnect vacuum line
5. Reset to proper idle speed

* 230, 292 engs. in P, PB models: Use oil pan timing tab under vehicle

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
6-cyl.: 248, 270 engs. 5° (steel ball on flywheel aligned with pointer); 230, 292 engs. 4°
V-8 1955-56, 5° (upper line)
1957, 3° (midway between lines)
1958-59, 6° (slightly above upper line)

FUEL PUMP

AC model: 6-cyl. AF, except 1964-65 292, EK
V-8 1955, FB; 1956-59, EN
Pressure: 6-cyl.: 248, 270, 4-5½ lb. at 3600 rpm; 230, 292 3½-4½ lb. at 500-1000 rpm
V-8, 4-5¼ lb. at 3600 rpm
Volume: 6-cyl. 1 pint in 45-60 seconds* at idle rpm
V-8, 1 pint in 30 seconds at idle rpm
* 1964-65: 292, 30-45 seconds

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
HOLLEY 1-bbl. 1904	1	manual	manual
ROCHESTER 1-bbl. B	1½-2½	manual	manual
STROMBERG 2-bbl. WW	1	*	*
ZENITH 1-bbl. 228BV	1¼	**	**
1-bbl. 63AW11C	1¼	16 rich	16 rich

* 1955, index; 1956, 1 rich
** Carburetor Numbers 0-11854, -11855, -11964, -11965, -11966, -11967, -11968, -12058, -12059 set at 15 notches rich; others, 13 notches rich

ENGINE IDLE SPEED

Manual Trans.: 6-cyl., 248, 270, 400-450 rpm; 230, 500 rpm; 292, 450-500 rpm; V-8, 460 rpm
Auto. Trans. 450* rpm in NEUTRAL
* 1957-59, 400 rpm; 1964-65 292, 450-500 rpm

VALVE CLEARANCES

(engine hot and running)
6-cyl.: 248, 270, Intake .012"; exhaust .020"
230, 292, Hydraulic lifters, nonadjustable
V-8: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	Without Heater 6-cyl.	Without Heater 8-cyl.
1955-57	17	26
1963-65	14	...
All other models	17	25

Cooling system pressure: 1960-62 P1500, 4 pounds; others, 7 pounds

★ **Generator** 1955-62 (2 oil cups) .... MO
6-cyl., left side

★ **Power Steering Reservoir** .... AF
Fill to level mark on reservoir or dipstick

Air Cleaner Element .... Service
Oil bath .... Wash and fill MO
4 1964-65 2 Others
2 Wire gauze .... Wash and oil MO

5 **Governor Air Filter Element** .... Wash
Some models. Replace as required

Fuel Filter Element .... Replace
5 1955-62 models
C 1963-65 models, in carburetor fuel inlet
Replace as required

★ **Steering Gear** (plug) .... SG

10 **PCV System Valve** .... Wash CC
230-, 292-cu. in. engines in valve cover

★ **Distributor Shaft** 1955-62 ....
8-cyl. (oil cup) .... MO
6-cyl. (grease cup) (right side) .... WB
1955-56 8-cyl.: Wick under rotor .... MO
Felt under plate (oil hole) . MO
Sparingly

Distributor Cam Lubricator 1963-65 ....
12 Rotate 180° 24 Replace

C **Gearshift Control Housing** (plug) ...... Fill CG
3-speed trans. only. Refill when shifting becomes difficult

★ LUBRICATION FITTINGS (•) .. CL

Fittings shown by (○) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows

★ **Speedometer Adapter** (fitting or grease cup) . CL

★ **Brake Master Cylinder** (plug) (thru floor) .... HB
Fill to ½ inch below top of fill hole

TRANSMISSION, Manual ..... MP

Above 0°, 90; below 0°, 80
★ Maintain level to fill plug hole
CAPACITY 3-speed, 2 pints; 3-speed heavy-duty, 2¾ pints; 4-speed, 6 pints
DRAIN and REFILL
12 1964-65 10 Others

★ **Universal Joints** .... 140 GL
Center joint not on single-section propeller shaft

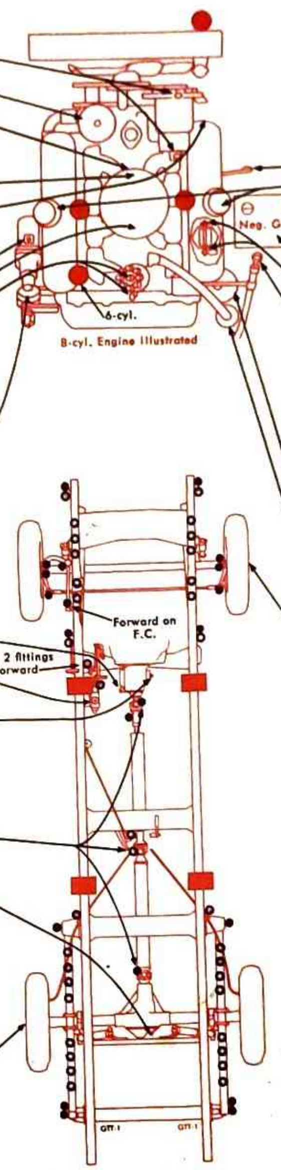
DIFFERENTIAL .... MP*

Above +100°, 140; above 0°, 90; below 0°, 80
★ Maintain level to fill plug hole
CAPACITY 100 series: Spicer 44, 3 pints; Spicer 45, 3½ pints; all other models, 4½ pints; 150, 1500 series: Spicer 60, 5½ pints; all other models, 6½ pints
DRAIN and REFILL
24 1964-65 10 Others
POWR-LOK IDENTIFICATION:
Metal tag attached to housing near fill plug
P-, PB1500, caution sticker mounted in driver compartment

Rear Wheel Bearings .... Repack CG
P-, PB1500 only
Necessary to remove axle shafts
30 1964-65 20 1960-63

GAS TANK

	Gallons
PM151; P-, PB1501	15½
PM152, -153; P-, PB1502, -1503	18
Side mounted	17
All other models	17½



Position for lift adapter
Cooling system drain

CRANKCASE .... "DG" MO

Severe start-and-stop cold-weather operation, "DM" may be used

Above +90°	30
Above +32°	30,20
Above +10°	20W
Above −10°	10W
Below −10°	5W

CAPACITY 6-cyl.: 1955-62, 8 quarts; 1963-65 230-cu. in. eng., 4 quarts; 292-cu. in. eng., 5 quarts. 8-cyl., 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick .... Check level

Oil Fill Caps .... Wash and oil MO OC
6-cyl., 1 cap, located forward; 1955-62, no service required

Crankcase Breather Inlet Element .. Inspect OC
Reach under oil fill cap. Replace if necessary
PM150, Series P1500 and 6-cyl. models with PCV. Not on 1963-65 models

Battery .... Test and fill ★

Manifold Heat Control Valve .... MH C
Lubricate if shaft is not free. 6-cyl., left side

TRANSMISSION, Automatic

1955-62 .... "DG" MO, AF
DG, crankcase grade; except below 0°, AF
1963-65 Pow-R-Flo .... AF
Check level, engine idling, NEUTRAL position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
1955-62 6-cyl.	6	9
8-cyl.	6½	9½
1963-65 6-cyl.	2	2

DRAIN and REFILL
1955-62 15
Remove 1 coupling plug and transmission plug
1963-65 12
Remove oil pan or plug
More often for heavy-duty operation

Oil Filter (under truck) .... Replace 4
Add extra quart oil. 6-cyl., forward; reach under hood

Crankcase Breather Outlet Element 8-cyl. ...... Wash and oil 20 MO OC
More often in extreme dust

Front Wheel Bearings .... Repack WB
1964-65 30 Others 20
1955-59, initial torque, 45-60 ft. lb.; final adjustment, loosen ⅛ to ¼ turn
1960-65, initial torque, 33 ft. lb.; final adjustment, loosen nut to align slot with hole in spindle, maximum, 1/12 turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated

Adjust the brakes as follows:
1. Disconnect parking brake cables from idler lever
2. Turn star wheel adjuster until a light drag is felt when drum is turned
3. Back off adjuster 7 notches
4. Repeat procedure at each wheel
5. Reconnect parking brake cables and adjust

1964-65, self-adjusting brakes; adjustment not normally required
Bleeding sequence: LR, LF, RR, RF

KEY TO INTERVALS

★ 1955-63, Every 1,000 miles
1964-65, Every 6,000 miles
OC Every crankcase oil change
C Conditional service
4 Every 4,000 miles or 6 months
Other numbered symbols indicate intervals in thousands of miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A
CC	Carburetor Cleaner
CG	Cup Grease
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil "DG" meeting MIL-L-2104A
MP*	Multi-Purpose Gear Lubricant
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease

* For Powr-Lok differential, use Special Lubricant

GMC TRUCKS

1960-65 Series 1000, 1500
1963-65 Series 2500; P-, PB1000
1964-65 Series I-1000, -1500, -2500

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
All	24 24T	53, 61 70

COMPRESSION PRESSURE

(at cranking speed with throttle open)	psi
V-6 engine	125
In-line 6 and 4-cyl. engines	130

SPARK PLUGS

AC: V-6, 1960-61 C44, 1962 C44S, 1963 C44S (⅜" reach) or C44NS (¾" reach) depending on head design; 1964-65 C44NS
In-line 6 and 4-cyl., 46N
Gap: V-6, .033"-.038"; In-line 6 and 4-cyl., .035"
Torque: 23-27 ft. lb.

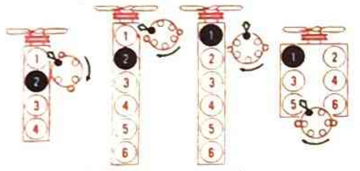
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



P-, PB1000 **Others**

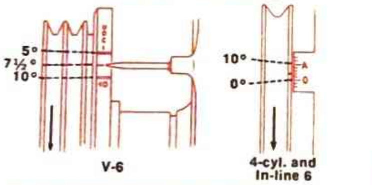
Firing Order:
V-6 1, 6, 5, 4, 3, 2
In-line 6 **1, 5, 3, 6, 2, 4**
4-cyl. **1, 3, 4, 2**

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Disconnect distributor vacuum line and tape manifold opening
3. Connect timing light to No. 1 spark plug or distributor cap tower (1963-65 P-, PB1000, No. 2 spark plug or distributor cap tower)
4. Set idle speed to lowest rpm at which the engine will run smoothly
5. Observe timing at crankshaft damper or pulley* and turn distributor to obtain recommended setting
6. Reconnect vacuum line and reset to proper idle

* P-, PB1000: Use oil pan timing tab under vehicle

Timing Mark and Setting



V-6 **4-cyl. and In-line 6**

Timing Setting (Before Top Dead Center):
V-6: 1960-61, 5°; 1962-65, 7½°
In-line 6 and 4-cyl.: 4°

FUEL PUMP

AC: V-6, 1960-63, model HK; 1964-65, model HQ
In-line 6 and 4-cyl., model EM
Pressure: V-6, 5-6 lb. at 3600 rpm
In-line 6 and 4-cyl., 3½-4½ lb. at 500-1000 rpm
Volume: Not required

CARBURETOR ADJUSTMENT

	Idle Mixture (initial turns)
CARTER	
1-bbl.	1½
HOLLEY	
1-bbl. 1904	1
ROCHESTER	
1-bbl. B	1½-2½
STROMBERG	
2-bbl. WW2	1

ENGINE IDLE SPEED

Manual Trans.: V-6, 400-500 rpm; In-line 6 and 4-cyl., 450-500 rpm
Auto. Trans. 450 rpm in NEUTRAL

VALVE CLEARANCES

(engine hot and running)

V-6: Intake .012"; exhaust .018"
In-line 6 and 4-cyl.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM .... Quarts

	Without Heater
1000 series	33, 32
1500 series	33, 34
2500 series	34
I-1000, -1500, -2500	11
P-, PB1000	14, 8¼*

* 4-cylinder

Cooling system pressure, 1960-62, 7 pounds; 1963-65, 13 pounds

★ **Generator** (2 oil cups) .... **MO**
1963-65, no lubrication

★ **Power Steering Reservoir** .... **AF**
Fill to level mark on reservoir

OC **Oil Fill Caps** .... Wash and oil **MO**
In-line engine, 1 cap, located forward
1963-65 V-6, 1 cap, right side, sealed

Air Cleaner Element .... Service
Oil bath .... Wash and fill **MO**
Crankcase grade
4 1964-65 2 Others
2 Wire gauze .... Wash and oil **MO**
4 Dry type .... Check
Replace if clogged with oil and dirt

Governor Air Filter Element .... Wash
6 1964-65 5 Others
On V-6 only. Replace as required

10 **PCV System Valve** .... Wash **CC**
1963-65 V-6, remove valve covers to service, located rear of cylinder heads. In-line engine, located in valve cover, rear

4 **Oil Filter** (under truck) .... Replace
Add extra quart oil. In-line engine, right side front

★ **Master Cylinder** (plug) .... **HB**
Fill to ½ inch below top of opening
P-, PB1000, reached thru access door in instrument panel

OC **Crankcase Breather Element** .... Inspect
Replace if clogged. On V-6 models with PCV

★ **Steering Gear** (plug) .... **SG**

★ **LUBRICATION FITTINGS** (•) .. **CL**
Fittings shown by (O) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows

Brake Vacuum Cylinder Air Cleaner ...... Wash
6 1964-65 2 Others

★ **Speedometer Adapter** (fitting or grease cup) . **CL**

TRANSMISSION, Manual

★ Maintain level to fill plug hole
1963-65 3-spd. HD New Process 745G ...... **AF**
CAPACITY 3¾ pints
Others .... **MP**
Above 0°, 90; below 0°, 80
CAPACITY 3-spd., **2 pints**; 3-spd. HD, **3 pints**; 4-spd., **6 pints**; 4-spd. HD NP-435G, **7 pints**
DRAIN and REFILL
12 1964-65 10 1960-63

★ **Universal Joints** .... 140 **GL**
Center joint not on single-section propeller shaft

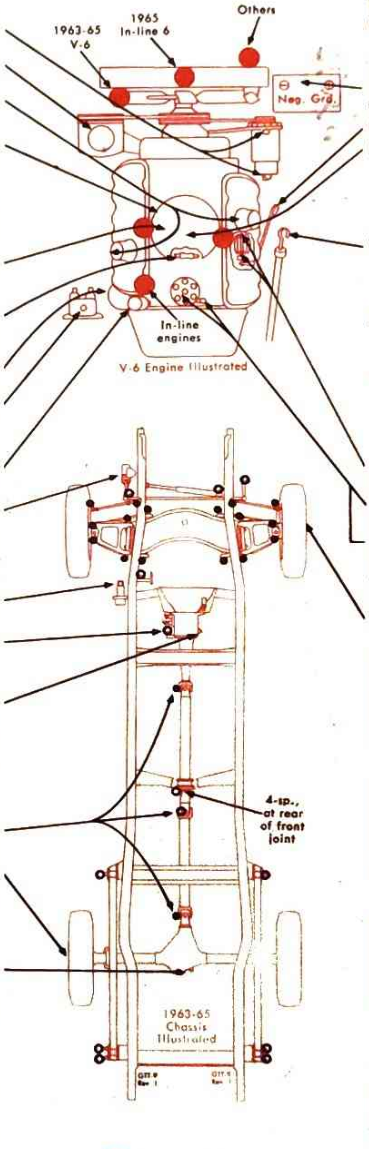
Rear Wheel Bearings .... Repack
1500 series .... **WB**
2500 series .... **CG**
Necessary to remove axle shafts
30 1964-65 20 1960-63

DIFFERENTIAL .... MP*

Above +100°, 140; above 0°, 90; below 0°, 80
★ Maintain level to fill plug hole
CAPACITY 1000 series, **3 pints**; 1500 series, **5½ pints**; 2500 series, **6½ pints**
DRAIN and REFILL
24 1964-65 10 1960-63
POWR-LOK IDENTIFICATION:
Metal tag attached to housing near fill plug
P-, PB1000, caution sticker mounted in driver compartment

GAS TANK .... Gallons

GAS TANK	Gallons
1960-62	17
1963-65	16¾-20



● Cooling system drain

CRANKCASE .... "DG" MO

Severe start-and-stop cold-weather operation, "DM" may be used

Temperature	Grade
Above +32°	20
Above +10°	20W
Above −10°	10W
Below −10°	5W

CAPACITY V-6, 305 eng. **5 quarts**, 351 eng. **8 quarts**; in-line 6, **4 quarts**; 4-cyl., **3½ quarts**
DRAIN and REFILL
See Service Instructions, page 4

Battery .... Test and fill ★
Caution: Do not ground positive terminal

Crankcase Dipstick .... Check level

Fuel Filter Element .... Replace
1960-63 except P-, PB1000 10
On frame side rail
1963 P-, PB1000; all 1964-65 C
In carburetor fuel inlet. Replace as required

TRANSMISSION, Automatic

1960-62 .... "DG" **MO, AF**
DG, crankcase grade; except below 0°, AF
1963-65 Pow-R-Flo .... **AF**
Check level, engine idling, NEUTRAL position ... ★

CAPACITY, quarts	Initial Refill	Total Refill
1000 series 1960-62	6½	9
1500 series 1960-62	6½	10
All 1963-65	2	2

DRAIN and REFILL
1960-62 15
Remove 1 coupling plug and transmission plug
1963-65 12
Remove oil pan or plug
More often for heavy-duty operation

Manifold Heat Control Valve .... **MH** C
Lubricate if shaft is not free. Not on 351 engine

Distributor Shaft (oil cup) .... **MO** ★
351 eng.; all 1960-63 models except P-, PB1000

Distributor Cam Lubricator
1963 P-, PB1000; all 1964-65 models except 351 engine
Rotate 180° 12 Replace 24
In-line engine, right side forward

Front Wheel Bearings .... Repack **WB**
1960-63 20 1964-65 30
Ball bearing, initial torque 33 ft. lb.; loosen nut to align slot with hole in spindle, max. 1/12 turn. Roller bearing: 1963 1500, 2500 series, initial torque 40 ft. lb.; loosen nut 1/3 turn. 1964-65, initial torque 14 ft. lb.; all 1000 series, initial torque 12 ft. lb.; final adjustment, loosen nut 1/6 to 1/4 turn

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2" with standard brakes or more than 1" with power brakes, engine running, the need for service is indicated
Adjust brakes as follows:

1. Disconnect parking brake cable from idler lever
2. Using a suitable tool inserted into adjustment opening in backing plate, turn star wheel adjuster until a light drag is felt when drum is revolved
3. Back off adjuster 7 notches
4. Repeat procedure at each wheel
5. Reconnect parking brake cable and adjust

1964-65 1000, 1500-, I-1000, I-1500; 1965 2500, I-2500, P-, PB1000, self-adjusting brakes; adjustment not normally reouired
Bleeding sequence: LR, LF, RR, RF

KEY TO INTERVALS

★ **1960-63, Every 1,000 miles**
1964-65, Every 6,000 miles
OC **Every crankcase oil change**
C **Conditional service**
4 **Every 4,000 miles or 6 months**
Other numbered symbols indicate intervals in thousands of miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

Code	Lubricant
AF	Automatic Transmission Fluid, Type A
CC	Carburetor Cleaner
CG	Cup Grease
CL	Chassis Lubricant
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty
MH	Graphite mixed with alcohol
MO	Motor Oil "DG" meeting MIL-L-2104A
MP*	Multi-Purpose Gear Lubricant
SG	Steering Gear Lubricant
WB	Wheel Bearing Grease

* For Powr-Lok or Positraction differential, use Special Lubricant

GMC TRUCKS

1964-65 Handi-Van Model G-1000

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

BATTERY	AABM Group No.	Amp. Hrs.
All	22F	44
	24T	70

COMPRESSION PRESSURE

(at cranking speed with throttle open) psi
All 130
Maximum variation between cylinders, 20 psi

SPARK PLUGS

AC 46N; for continuous heavy-duty operation, 44N
Gap: .035"
Torque: 25 ft. lb.

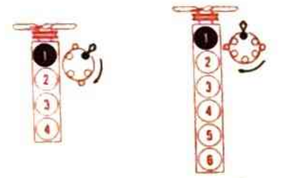
IGNITION POINTS

Delco
Gap: .016" used; .019" new
Dwell angle: 31°-34°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

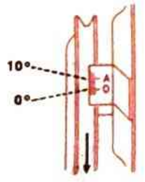


Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. Connect timing light to No. 1 spark plug or distributor cap tower
4. Disconnect distributor vacuum line and tape manifold opening
5. Set idle speed to 500 rpm
6. Observe timing at crankshaft pulley and turn distributor to obtain recommended setting
7. Reconnect vacuum line and reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
4-cyl. 4° (Range, 4°-8°)
6-cyl. 8° (Range, 6°-10°)
(Each line equals 2°)

FUEL PUMP

AC mechanical
Pressure: 3½-4½ lb. at idle to 1000 rpm
Volume: 1 pint in 30-45 seconds at idle rpm

CARBURETOR ADJUSTMENT

CARTER	Idle Mixture (initial turns)	Choke (notches) Man. Trans.	Choke (notches) Auto. Trans.
1-bbl. YF	1½	manual	manual

ENGINE IDLE SPEED

Manual Trans. 450-500 rpm
Auto. Trans. 450-500 rpm in DRIVE

VALVE CLEARANCES

Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM ....Quarts

	Without Heater
4-cyl.	9½
6-cyl.	12

Cooling system pressure, 13 pounds

Distributor Cam Lubricator................
12 Rotate 180° 24 Replace

C Manifold Heat Control Valve............MH
Lubricate if shaft is not free

C Fuel Filter.................Replace element
Located in carburetor fuel inlet. Replace as required

Air Cleaner Element................Service
★ Oil bath...............Wash and fill MO
Above +32°, 50; below +32°, 20
12 Polyurethane.............Wash and oil
12 Dry type ....Check
Replace if necessary. If not replaced, recheck every 6,000 miles until replaced

★ Master Cylinder ....HB
Keep filled to within ¼ inch of opening
Reached thru floor

36 Steering Gear (plug).....................SG

★ LUBRICATION FITTINGS (•). .CL

Fittings shown by (O) are not found on every model

TRANSMISSION, Manual. .80 MP

80-90 may be used
★ Maintain level to fill plug hole
CAPACITY 2 pints
DRAIN and REFILL Not recommended

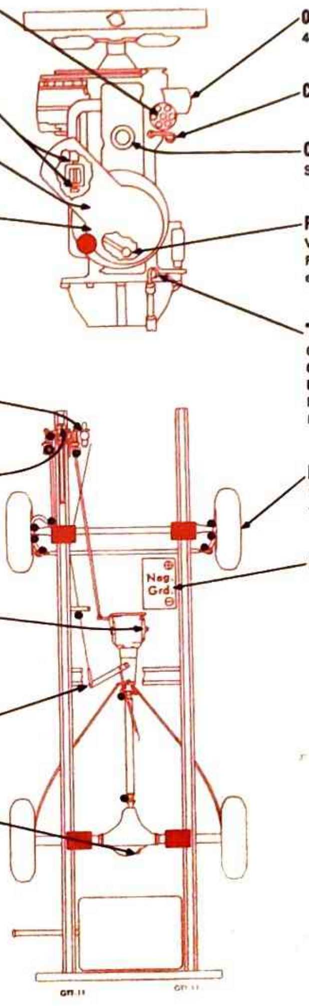
★ Parking Brake Linkage.............Coat CL
Coat linkage, pulleys and cables

DIFFERENTIAL...........80 MP*

80-90 may be used
★ Maintain level to fill plug hole
Some, fill plug on right side forward
CAPACITY 4 pints
DRAIN and REFILL Not recommended
POSITRACTION IDENTIFICATION:
Circular metal tag under fill plug

GAS TANK ....Gallons

G-1000 20



CRANKCASE

CRANKCASE		"MS" MO
Above +32°	20,20W*	10W-30
Above 0°	10W	10W-30
Below 0°	5W	5W-20

* 30 may be used for high speeds above +90°
CAPACITY 4-cyl., 3¾ quarts; 6-cyl., 4 quarts
DRAIN and REFILL
See Service Instructions, page 4

Oil Filter..................Replace element ★
4-cyl., add extra pint oil; 6-cyl., extra quart

Crankcase Dipstick.............Check level

Oil Fill Cap................Wash and oil MO OC
Sealed cap, no service

PCV System ....Check OC
Valve type, test valve and replace if necessary. Fixed orifice type, clean as required. Clean hoses every 6,000 miles

TRANSMISSION, Automatic. .AF

Check level, fluid warm, engine idling, in NEUTRAL ★
CAPACITY Refill 1½ quarts
DRAIN and REFILL.................................12
Remove oil pan or plug
More often for heavy-duty operation

Front Wheel Bearings............Repack WB 30
Initial torque, 15 ft. lb., while rotating wheel; final adjustment, back off 1 full flat, ⅙ turn

Battery.........................Test and fill ★

BRAKE ADJUSTMENT

Brakes are self-adjusting. Adjustment is not normally required
Bleeding sequence: LR, RR, RF, LF

KEY TO INTERVALS

- ★ Every 6,000 miles or 6 months
- 12 Every 12,000 miles
- 24 Every 24,000 miles
- 30 Every 30,000 miles
- 36 Every 36,000 miles
- OC Every crankcase oil change
- C Conditional service

🟥 Position for lift adapter
● Cooling system drain

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF Automatic Transmission Fluid, Type A, Suffix A
CL Chassis Lubricant Water Resistant EP Type
HB Hydraulic Brake Fluid, Heavy-Duty
MH Graphite mixed with alcohol
MO Motor Oil
MP* Multi-Purpose Gear Lubricant Meeting Specification MIL-L-2105B
SG Steering Gear Lubricant
WB Wheel Bearing Grease

* For Positraction differential, use Special Positraction Lubricant

INTERNATIONAL TRUCKS

1957-61 A and B Series 4x2 100, 110, 120, 130
1957-65 Metro AM-120, AM-130

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY

	AABM Group No.	Amp. Hrs.
All	24H	50, 60

COMPRESSION PRESSURE

(at cranking speed with throttle open)
Lowest cylinder pressure must be within 90% of highest cylinder

SPARK PLUGS

Metro models: AC, C46; Autolite, A9; Champion, J-11; Others: AC, C45; Autolite, A7; Champion, J-8
Gap: 6-cyl., .028"-.033"; 8-cyl., .025"-.030"
Torque: 28-30 ft. lb.

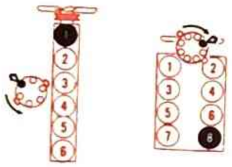
IGNITION POINTS

Delco
Gap: 6-cyl., used points .016"; new points .019"
8-cyl., used points .014"; new points .016"
Dwell angle: 6-cyl., 28°-35°; 8-cyl., 26°-29°

CONDENSER

Delco
Capacity: .18-.23 mfd

Cylinder Numbering Sequence

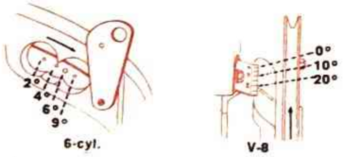


Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
8-cyl. 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. 6-cylinder: Connect timing light to No. 1 spark plug or distributor cap tower
   8-cylinder: Connect timing light to No. 8 spark plug or distributor cap tower
4. With transmission in NEUTRAL:
   6-cyl.: Set to idle speed
   8-cyl.: Set to 350 rpm
5. Observe timing mark:
   6-cylinder: Thru opening in flywheel housing
   8-cylinder: At crankshaft damper
6. Turn distributor to obtain alignment of timing mark and pointer
7. Reset to proper idle speed

Timing Mark and Setting



Timing Setting (Before Top Dead Center):
6-cyl.: 220, 240, 241 engines, 4°; 264, 265 engines, 2°
8-cyl. 266 engine, 4°

FUEL PUMP

AC or Carter
Pressure: 6-cyl., 3-4½ lb.; 8-cyl., 4-5½ lb.; at 500-2000 rpm
Volume: 6-cyl., 33½ ounces per minute at speeds up to 3500 rpm; 8-cyl., 57½ ounces per minute at speeds up to 4000 rpm

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)
6-cyl.	
1-bbl. 1904*	¾-1¼
1-bbl. 1904**	1¼-1¾
1-bbl. 2110**	1¼-1¾
8-cyl.	
2-bbl. 2300	1

* 220 engine
** 240, 241, 264, 265 engines

ENGINE IDLE SPEED

Manual Trans. 350-400* rpm
Auto. Trans. 350-400* rpm in DRIVE
* 8-cyl., 450-500 rpm

VALVE CLEARANCES

(engine hot and running)
6-cyl.: Intake .024"-.026"; exhaust .024"-.026"
8-cyl.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts Without Heater
100, 110, 120, 130 6-cyl.	15
8-cyl.	21
Metro	17

Cooling system pressure, 7 pounds

★ **Power Steering Reservoir** ..... 10W "MS" MO
Fill to "F" mark on dipstick or 1½ inches from top of filler neck

20 **Power Steering Oil Filter Element** ..... Clean
Located in reservoir. Early models, replace element when oil is discolored

★ **Steering Gear** (plug) ..... 90 MP
Metro, reach under fender

★ **Oil Fill Cap** ..... Wash and oil 30 MO
8-cyl., right side; Metro, at rear
Late models, sealed cap, no service

3 **Oil Filter** ..... Replace, add extra quart oil
8-cyl., late 6-cyl., reach under truck. When auxiliary bypass filter is installed, change standard full-flow element every 10,000 miles, bypass element every 3,000 to 4,000 miles

Crankcase Dipstick ..... Check level
8-cyl., right side, front; Metro, rear

★ **Distributor Shaft** (oil cup) 8-cyl. ..... 20W MO
10 Shaft (plug) 6-cyl. ..... 20W MO
Fill reservoir to plug hole
3 Wick under rotor, 6-cyl. ..... 10W MO

TY **PCV System Valve** ..... Clean
Disassemble valve body and line. 8-cyl., in valve cover

★ **Brake Master Cylinder** (plug) ..... HB
Fill to ½ inch below top of fill hole
Metro, reach under floor or fender

★ LUBRICATION FITTINGS (•) .. CL

Fittings shown by (O) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows

15 **Speedometer Cable** ..... Coat GG

★ **Hydrovac Air Cleaner Element** ..... 30 MO
Wash and oil. Some, right side

15 **Hydrovac Cylinder** ..... VO
Fill to plug level. Some, right side

★ **Clutch Equalizer Shaft Yoke** ..... Coat CL
Not on Metro or automatic transmission models

15 **Clutch Release Bearing** ..... Sparingly WB
Remove cover below flywheel. Rotate bearing to four 90° positions when lubricating sleeve. Coat release fork tips
Stop-and-go driving, 10,000 miles

TRANSMISSION, Manual ..... GL

Above 0°, 90; below 0°, 80. For temperatures consistently above +90°, 140; below 0°, 75
★ Maintain level to fill plug hole

CAPACITY, pints	3-Speed Synchro-shift	3-Speed H.D.	4-Speed Synchro-shift
100	2½*	...	7
110, 120	2½*	6	7†
Metro	2½	6	7
130	...	6	7†

* With overdrive, 3½
† Nonsynchronized 4-speed, 5

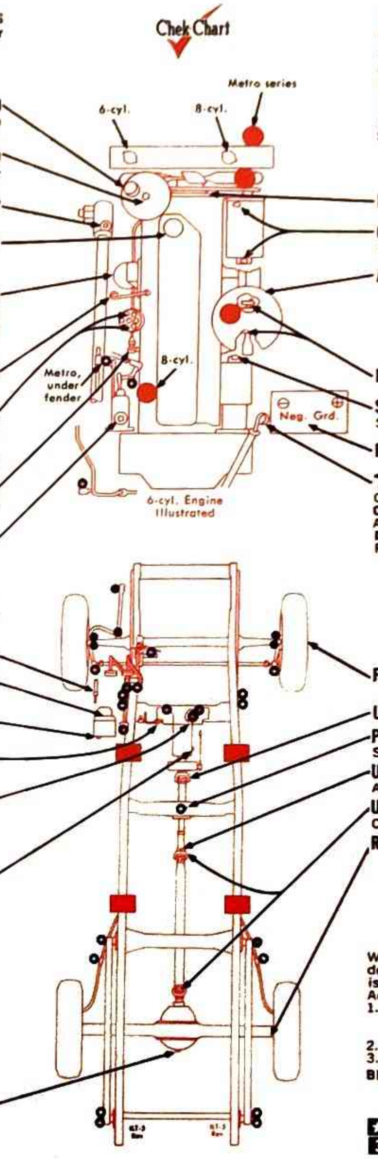
TY **DRAIN and REFILL**
Overdrive, drain and fill thru separate plug holes
Fill overdrive first

DIFFERENTIAL ..... EP, MP*

Above +40°, 140; below +40°, 90
★ Maintain level to fill plug hole
CAPACITY 100, 3 pints; 110, 120, Metro AM-120, 4 pints; 130, Metro AM-130, 5½ pints
TY **DRAIN and REFILL**
POWR-LOK IDENTIFICATION:
Axle Nos. 14003, -006, -011 on plate inside cab

GAS TANK

	Gallons
Series 100, 110, 120, 130	17
Panel, Travelette, Travelall	15
Metro AM-120	15
AM-130	17



🟥 Position for lift adapter
● Cooling system drain

CRANKCASE

	"MS or S1" MO	
Above +32°	30	...
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°	...	5W-20

CAPACITY 5 quarts except early 1957, 6 quarts; 1958-64 Metro, 7 quarts
DRAIN and REFILL
See Service Instructions, page 4

Fan Belt Idler Pivot Shaft (oiler) 8-cyl. ..... 30 MO ★

Generator (2 oil cups) ..... MO ★
1957-62, some 1963 models

Air Cleaner Element ..... Service
Dry type ..... Clean 5
Dry type ..... Replace 15
Oil bath ..... Wash and fill MO 5
Crankcase grade

Manifold Heat Control Valve Shaft 6-cyl. ..... PO ★

Starter (oil cup) ..... 30 MO 3
Some, no oil cup. Lubricate at overhaul

Battery ..... Test and fill ★

TRANSMISSION, Automatic .. AF

Check level, engine idling, PARK position ..... ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL 15
Remove 2 converter plugs and transmission fill pipe

Front Wheel Bearings ..... Repack LM 25

Universal Joint (plug or fitting) ..... 140 GL 3

Propeller Shaft Bearing ..... WB ★
Some long-wheelbase models

Universal Joint Spline (plug or fitting) ..... CL ★
At front joint on single shaft models

Universal Joints (plugs or fittings) ..... 140 GL 3
Center joint on models with 2 propeller shafts

Rear Wheel Bearings
With plug (100, 110 series) ..... 1 oz. LM 25
Use low pressure
Without plug ..... Repack LM 25
Necessary to remove axle shafts

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2"-3" the need for service is indicated
Adjust the brakes as follows:

1. Using suitable tool inserted into adjusting opening in backing plate, expand shoes until drum can just be turned by hand
2. Back off adjustment screw 12-14 notches
3. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 1,000 to 2,000 miles
3 Every 3,000 to 5,000 miles
Oil Filter: Every 3,000 to 4,000 miles
5 Every 5,000 miles
10 Every 10,000 to 20,000 miles
15 Every 15,000 to 20,000 miles
Automatic Transmission: Every 15,000 miles
20 Every 20,000 miles
25 Every 25,000 miles
TY Twice yearly or every 10,000 miles

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A
CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant Sulfur chlorine lead type
GG	Graphite Grease
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease When using WB, reduce interval to 10,000 to 20,000 miles
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant
PO	Penetrating Oil
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease Short fiber

* This lubricant also recommended for Powr-Lok differential

INTERNATIONAL TRUCKS

1961-65 C Series 100, 1000

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24H	50, 60

COMPRESSION PRESSURE

(at cranking speed with throttle open)

Lowest cylinder pressure must be within 90% of highest cylinder

SPARK PLUGS

AC C45; Autolite A7; Champion J-8
Gap: 6-cyl., .028"-.033"; 8-cyl., .025"-.030"
Torque: 28-30 ft. lb.

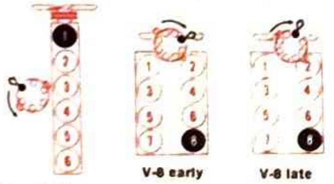
IGNITION POINTS

Delco, Holley
Gap: 6-cyl. used points .016"; new points .019"
8-cyl. used points .014"; new points .016"
Dwell angle: 6-cyl., 28°-35°; 8-cyl., 26°-29°

CONDENSER

Delco, Holley
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



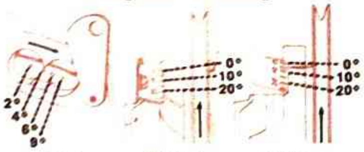
V-8 early **V-8 late**

Firing Order:
6-cyl. 1, 5, 3, 6, 2, 4
8-cyl. 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. 6-cyl.: Connect timing light to No. 1 spark plug or distributor cap tower
   8-cyl.: Connect timing light to No. 8 spark plug or distributor cap tower
4. With transmission in NEUTRAL:
   6-cyl.: Set to idle speed
   8-cyl.: Set to 350 rpm
5. Observe timing mark:
   6-cyl.: Thru opening in flywheel housing
   8-cyl.: At crankshaft damper
6. Turn distributor to obtain alignment of timing mark and pointer
7. Reset to proper idle speed

Timing Mark and Setting



6-cyl. **V-8 early** **V-8 late**

Timing Setting (Before Top Dead Center):
6-cyl.: 220, 240, 241 engines, 4°
8-cyl.: 266 engine, 4°; 304 engine, 0°

FUEL PUMP

AC or Carter
Pressure: 6-cyl., 3-4½ lb.; 8-cyl., 4-5½ lb.; at 500-2000 rpm
Volume: 6-cyl., 33½ ounces per minute at speeds up to 3500 rpm; 8-cyl., 57½ ounces per minute at speeds up to 4000 rpm

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)
6-cyl.	
1-bbl. 1904*	¾-1¼
1-bbl. 1904**	1¼-1¾
8-cyl.	
2-bbl. 2300	1

* 220 engine
** 240, 241 engines

ENGINE IDLE SPEED

Manual Trans. 350-400* rpm
Auto. Trans. 350-400* rpm in DRIVE
* 8 cyl., 450-500 rpm

VALVE CLEARANCES

(engine hot and running)

6-cyl.: Intake .024"-.026"; exhaust .024"-.026"
8-cyl.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts Without Heater
6-cyl.	16
8-cyl. V 266 engine	19
V 304 engine	20

Cooling system pressure, 7 pounds

★ **Battery** . . . . . . Test and fill

★ **Steering Gear** (plug) . . . . . . 90 **MP**

C **Fuel Filter Element** . . . . . . Replace if clogged
Inspect bowl and element, clean as required
8-cyl., right side, forward

3 **Oil Filter** . . . . . . Replace, add extra quart oil
Reach under truck. When auxiliary bypass filter is installed, change standard full-flow element every 10,000 miles, bypass element every 3,000 to 4,000 miles

3 **Tachometer Drive Gears** V-304 eng. . . . . . **CL**
In distributor housing. Lubricate until lubricant appears at vent hole in distributor housing

10 **Distributor Shaft** 6-cyl. (plug) . . . . . . 20W **MO**
Fill reservoir to plug hole

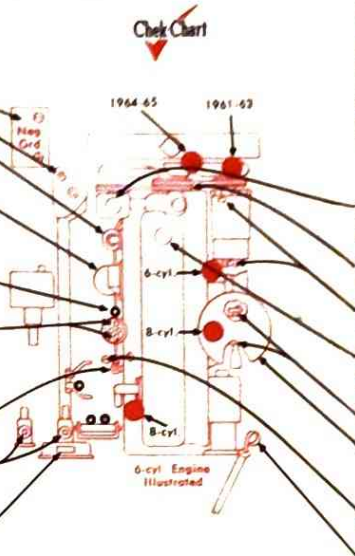
★ 8-cyl. (oil cup) right side, front . . . . 20W **MO**
Early models only

3 Wick under rotor, 6-cyl. . . . . . . 10W **MO**

TY **PCV System Valve** . . . . . . Clean
Disassemble valve body and line. 8-cyl., rear at center

★ **Brake and Clutch Reservoirs** (plug or cover) . . **HB**
Fill to ¾ inch below top of fill hole
Without power brakes, single dual purpose reservoir

25 **Power Brake Cylinder Air Cleaner Felt** . . . . Wash



CRANKCASE

	"MS or SI" MO	
Above +32°	30	
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°		5W-20

CAPACITY 6-cyl., 6 quarts; 8-cyl., 5 quarts
DRAIN and REFILL
See Service Instructions, page 4

Power Steering Reservoir . . . . . . 10W "MS" **MO** ★
Fill to "F" mark on dipstick or "OIL LEVEL" mark on filler neck

Fan Belt Idler Pivot Shaft (oiler) 8-cyl. . . 30 **MO** ★
Not on late models

Generator (2 oil cups) . . . . . . **MO** ★
1961-62, some 1963 models

Oil Fill Cap . . . . . . Wash and oil 30 **MO** ★
8-cyl., right side. Late models, sealed cap, no service

Manifold Heat Control Valve Shaft 6-cyl. . . . **PO** ★

Air Cleaner Element . . . . . . Service
Oil bath . . . . . . Wash and fill **MO** **5**
Above +32°, 40 or 50; below +32°, 20W

Crankcase Dipstick . . . . . . Check level
8-cyl., right side, front

TRANSMISSION, Automatic . . AF

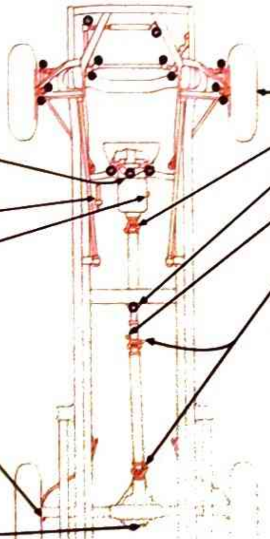
Check level, engine idling, PARK position . . . . . . ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL **15**
Remove 2 converter plugs and transmission fill pipe

★ LUBRICATION FITTINGS (•) . . CL

Fittings shown by (O) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows



15 **Clutch Release Sleeve** . . . . . . Sparingly **WB**
Remove cover below flywheel
Coat release fork tips and contact pads
Stop-and-go driving, 10,000 miles

15 **Speedometer Cable** . . . . . . Coat **GG**

TRANSMISSION, Manual . . . . GL

Above 0°, 90; below 0°, 80. For temperatures consistently above +90°, 140; below 0°, 75

★ Maintain level to fill plug hole

CAPACITY 3-speed synchro-shift, 2½ pints; with overdrive, 3½ pints; 4-speed, 7 pints

TY **DRAIN and REFILL**
Overdrive, drain and fill thru separate plug holes
Fill overdrive first

25 **Rear Wheel Bearings** (plug) . . . . . . 1 oz. **LM**
Use low pressure

Front Wheel Bearings . . . . . . Repack **LM** **25**

Universal Joint (plug or fitting) . . . . . . 140 **GL** **3**

Propeller Shaft Bearing . . . . . . **WB** ★
Models with 2 propeller shafts

Universal Joint Spline (plug or fitting) . . . . . . **CL** ★
At front joint on single shaft models

Universal Joints (plugs or fittings) . . . . 140 **GL** **3**
Center joint on models with 2 propeller shafts

DIFFERENTIAL . . . . . . EP, MP•

Above +40°, 140; below +40°, 90

★ Maintain level to fill plug hole

CAPACITY 3 pints

TY **DRAIN and REFILL**

POWR-LOK IDENTIFICATION:
Metal tag under differential cover bolt below fill plug

GAS TANK

	Gallons
Standard on all models	17
Auxiliary optional on Panel, Travelall	19

● Cooling system drain

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2"-3" the need for service is indicated

Adjust the brakes as follows:

1. Using suitable tool inserted into adjusting opening in backing plate, expand shoes until drum can just be turned by hand
2. Back off adjustment screw 12-14 notches
3. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ **Every 1,000 to 2,000 miles**
3 **Every 3,000 to 5,000 miles**
Oil Filter: Every 3,000 to 4,000 miles
5 **Every 5,000 miles**
10 **Every 10,000 to 20,000 miles**
15 **Every 15,000 to 20,000 miles**
Automatic Transmission: Every 15,000 miles
25 **Every 25,000 miles**
TY **Twice yearly or every 10,000 miles**
C **Conditional service**

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A
CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant Sulfur chlorine lead type
GG	Graphite Grease
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease When using **WB**, reduce interval to 10,000 to 20,000 miles
MO	Motor Oil
MP•	Multi-Purpose Gear Lubricant
PO	Penetrating Oil
WB	Wheel Bearing Grease Short fiber

• This lubricant also recommended for Powr-Lok differential

INTERNATIONAL TRUCKS

1961-65 C Series 4x2 110, 120, 130, 150,
900, 1100, 1200, 1300, 1500

TUNE-UP DATA

See Service Instructions for Procedure

BATTERY	AABM Group No.	Amp. Hrs.
All	24H	50, 60

COMPRESSION PRESSURE

(at cranking speed with throttle open)
Lowest cylinder pressure must be within 90% of highest cylinder

SPARK PLUGS

4-cyl.: AC C45; Autolite AT4; Champion J-6
Others: AC C45; Autolite A7; Champion J-8
Gap: 6-cyl. .028"-.033"; 4-cyl., 8-cyl. .025"-.030"
Torque: 28-30 ft. lb.

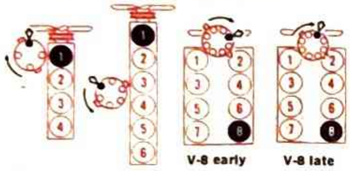
IGNITION POINTS

Delco, Holley
Gap: 6-cyl. used points .016"; new points .019"
4-cyl., 8-cyl.: Used points .014"; new points .016"
Dwell angle: 4-cyl. 74°-76°; 6-cyl. 28°-35°; 8-cyl. 26°-29°

CONDENSER

Delco, Holley
Capacity: .18-.23 mfd

Cylinder Numbering Sequence



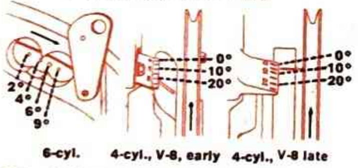
V-8 early   V-8 late

Firing Order:
4-cyl. 1, 3, 4, 2
6-cyl. 1, 5, 3, 6, 2, 4
8-cyl. 1, 8, 4, 3, 6, 5, 7, 2

TIMING PROCEDURE

1. Bring engine to operating temperature
2. Connect tachometer
3. 4-cyl., 6-cyl.: Connect timing light to No. 1 spark plug or distributor cap tower
   8-cyl.: Connect timing light to No. 8 spark plug or distributor cap tower.
4. 4-cyl.: Disconnect distributor vacuum line and tape manifold opening
5. With transmission in NEUTRAL:
   4-cyl., 6-cyl.: Set to idle speed
   8-cyl.: Set to 350 rpm
6. Observe timing mark:
   6-cyl.: Thru opening in flywheel housing
   4-cyl., 8-cyl.: At crankshaft damper
7. Turn distributor to obtain alignment of timing mark and pointer
8. 4-cyl.: Reconnect vacuum line
9. Reset to proper idle speed

Timing Mark and Setting



6-cyl.   4-cyl., V-8, early   4-cyl., V-8 late

Timing Setting (Before Top Dead Center):
4-cyl. 5°
6-cyl.: 220, 240, 241 engines, 4°
8-cyl.: 266 engine, 4°; 304 engine, 0° (TDC)

FUEL PUMP

AC or Carter
Pressure: 6-cyl., 3-4½ lb.; 4-cyl., 8-cyl. 4-5½ lb.; at 500-2000 rpm
Volume: 6-cyl., 33½ ounces per minute at speeds up to 3500 rpm; 4-cyl., 8-cyl. 57½ ounces per minute at speeds up to 4000 rpm

CARBURETOR ADJUSTMENT

HOLLEY	Idle Mixture (initial turns)
4-cyl.	
1-bbl. 1904	¾-1¼
6-cyl.	
1-bbl. 1904*	¾-1¼
1-bbl. 1904**	1¼-1¾
8-cyl.	
2-bbl. 2300	1

* 220 engine
** 240, 241 engines

ENGINE IDLE SPEED

Manual Trans.:
4-cyl. 450-500 rpm; 6-cyl. 350-400 rpm; 8-cyl. 450-500 rpm
Auto. Trans.:
6-cyl. 350-400 rpm; 8-cyl. 450-500 rpm; in DRIVE

VALVE CLEARANCES

(engine hot and running)
6-cyl.: Intake .024"-.026"; exhaust .024"-.026"
yl., 8-cyl.: Hydraulic lifters, nonadjustable

SERVICE AT INTERVALS SHOWN BY SYMBOLS

COOLING SYSTEM

	Quarts Without Heater
4-cyl.	12
6-cyl.	16
8-cyl.: V-266 engine	19
V-304 engine	20

Cooling system pressure, 7 pounds

★ **Distributor Shaft** 4-cyl., 8-cyl. (oil cup) . 20W **MO**
Oil cup on Delco distributor only
10 6-cyl. (plug) left side, center . . . . . . 20W **MO**
Fill reservoir to plug hole
3 Wick under rotor, 6-cyl. . . . . 10W **MO**

★ **Battery** . . . . Test and fill

★ **Steering Gear** (plug) . . . . 90 **MP**
Fill thru upper plug to level of lower plug hole

★ **Power Steering Reservoir** . . . . . 10W "MS" **MO**
Fill to "F" mark on dipstick or "OIL LEVEL" mark on filler neck

15 **Hydrovac Cylinder** . . . . **VO**
Fill to plug level. Series 120, 130, 150, 1200, 1300, 1500

★ **Hydrovac Air Cleaner Element** . . . . 30 **MO**
Wash and oil. Series 120, 130, 150, 1200, 1300, 1500

3 **Oil Filter** . . . . Replace, add extra quart oil
Reach under truck. When auxiliary bypass filter is installed, change standard full-flow element every 10,000 miles, bypass element every 3,000 to 4,000 miles

★ **Brake and Clutch Reservoirs** (plug or cover) . . **HB**
Fill to ¼ inch below top of fill hole
Single dual purpose reservoir on 110, 900, 1100 series without power brakes and all other series

25 **Power Brake Cylinder Air Cleaner Felt** . . . . Wash
110, 1100 series only

★ LUBRICATION FITTINGS (•) . . CL

Fittings shown by (O) are not found on every model
Fittings requiring different lubricant or interval are indicated by separate arrows

15 **Clutch Release Sleeve** . . . . Sparingly **WB**
Remove cover below flywheel
Coat release fork tips and contact pads
Stop-and-go driving, 10,000 miles

15 **Speedometer Cable** . . . . Coat **GG**

TRANSMISSION, Manual . . . . . GL

Above 0°, 90; below 0°, 80. For temperatures consistently above +90°, 140; below 0°, 75
★ Maintain level to fill plug hole
CAPACITY 3-speed synchro-shift, **2½ pints**, except 900 series, **2¾ pints; with overdrive, 3½ pints**; 3-speed H.D., **6 pints;** 4-speed synchro-shift, **7 pints**
TY **DRAIN and REFILL**
Overdrive, drain and fill thru separate plug holes
Fill overdrive first

DIFFERENTIAL . . . . EP, MP*

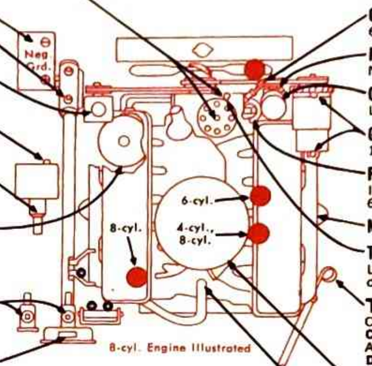
Above +40°, 140; below +40°, 90
★ Maintain level to fill plug hole
CAPACITY 900 series, **3 pints;** 110, 120, 1100, 1200 series, **4 pints except** 120, 1200 with RA-15 axle, **5½ pints;** 130, 1300, 150, 1500 series, **5½ pints except** 150, 1500 with RA-120 2-sp. axle, **13 pints**
TY **DRAIN and REFILL**
POWR-LOK IDENTIFICATION:
Metal tag under differential cover bolt below fill plug

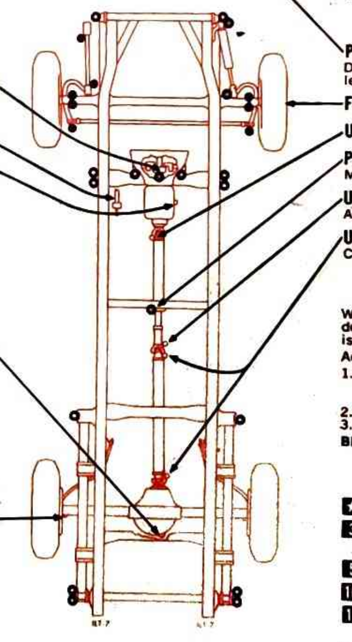
Rear Wheel Bearings
25 With plug (110, 900, 1100 series) . . 1 oz. **LM**
Use low pressure
25 Without plug (other series) . . . . . Repack **LM**
Necessary to remove axle shaft

GAS TANK

	Gallons
900 series	15
Others:	
Standard on all models	19
Optional on all models	15
Auxiliary optional on Panel, Travelall	19

Chek Chart





● Cooling system drain

CRANKCASE

	"MS or S1" MO	
Above +32°	30	...
Above +10°	20W	10W-30
Above −10°	10W	10W-30
Below −10°	...	5W-20

CAPACITY 4-cyl., **4 quarts;** 6-cyl., **6 quarts;** 8-cyl., **5 quarts**
DRAIN and REFILL
See Service Instructions, page 4

Crankcase Dipstick . . . . Check level
6-cyl., left side, rear of center

Fan Belt Idler Pivot Shaft (oiler) 8-cyl. . . 30 **MO** ★
Not on late models

Oil Fill Cap . . . . Wash and oil 30 **MO** ★
Late models, sealed cap, no service

Generator (2 oil cups) . . . . **MO** ★
1961-62, some 1963 models

Fuel Filter Element . . . . Replace if clogged C
Inspect bowl and element, clean as required
6-cyl., left side, forward

Manifold Heat Control Valve Shaft 6-cyl. . . . . **PO** ★

Tachometer Drive Gears V-304 engine . . . . . . **CL** 3
Lubricate until lubricant appears at vent hole in distributor housing

TRANSMISSION, Automatic . . AF

Check level, engine idling, PARK position . . . . ★

CAPACITY, quarts	Initial Refill	Total Refill
All models	5	10

DRAIN and REFILL 15
Remove 2 converter plugs and transmission fill pipe

Air Cleaner Element . . . . Service
Oil bath . . . . Wash and fill **MO** 5
Above +32°, 40 or 50; below +32°, 20W

PCV System Valve . . . . Clean TY
Disassemble valve body and line. 4-cyl., 6-cyl., left side, center

Front Wheel Bearings . . . . Repack **LM** 25

Universal Joint (plug or fitting) . . . . 140 **GL** 3

Propeller Shaft Bearing . . . . **WB** ★
Models with 2 propeller shafts

Universal Joint Spline (plug or fitting) . . . . **CL** ★
At front joint on single shaft models

Universal Joints (plugs or fittings) . . . . . 140 **GL** 3
Center joint on models with 2 propeller shafts

BRAKE ADJUSTMENT

With the brakes cold, if the brake pedal can be depressed more than 2"-3" the need for service is indicated

Adjust the brakes as follows:

1. Using suitable tool inserted into adjusting opening in backing plate, expand shoes until drum can just be turned by hand
2. Back off adjustment screw 12-14 notches
3. Repeat procedure at each wheel

Bleeding sequence: RR, LR, RF, LF

KEY TO INTERVALS

★ Every 1,000 to 2,000 miles
3 Every 3,000 to 5,000 miles
Oil Filter: Every 3,000 to 4,000 miles
5 Every 5,000 miles
10 Every 10,000 to 20,000 miles
15 Every 15,000 to 20,000 miles
Automatic Transmission: Every 15,000 miles
25 Every 25,000 miles
TY Twice yearly or every 10,000 miles
C Conditional service

FOR YOUR SAFETY, WE CHECK YOUR BATTERY, BRAKE FLUID, FAN BELT, LIGHTS, MUFFLER, TIRES AND WIPER BLADES

KEY TO LUBRICANTS

AF	Automatic Transmission Fluid, Type A
CL	Chassis Lubricant
EP	Extreme Pressure Gear Lubricant Sulfur chlorine lead type
GG	Graphite Grease
GL	Straight Mineral Gear Lubricant
HB	Hydraulic Brake Fluid, Heavy-Duty SAE 70R3
LM	Lithium Grease When using WB, reduce interval to 10,000 to 20,000 miles
MO	Motor Oil
MP*	Multi-Purpose Gear Lubricant 150, 1500: Must be suitable for heavy-duty hypoid axles
PO	Penetrating Oil
VO	Vacuum Cylinder Oil
WB	Wheel Bearing Grease Short fiber

* This lubricant also recommended for Powr-Lok differential

SPARK PLUG HEAT RANGE

This is a Heat Range Comparison. Cross reference between brands is approximate. For specific applications see Car Diagrams or spark plug manufacturers' catalog.

Thread Diameter	Reach	Heat Range	AC		AUTOLITE		CHAMPION	
			Regular	Resistor	Regular	Resistor	Regular	Resistor
10 mm	1/4"	Hot ↕ Cold	M-8 104		P6 P4	PR6 PR4	UY-6	
14 mm	3/8"	Hot ↕ Cold	48, 48X C47 46, C46 45, C45 44, C44 43, C43 42 C42-1 C42	R46 R45 R44 R43, CR43	A11 A9, AZ9 A7 A5 A3	AR10 AR80 AR51 AR41 AR31	UJ-12 J-11 J-8, UJ-8 J-7 J-6, UJ-6 J-4	XJ-12 XJ-11 XJ-8 XJ-7 XJ-6
	3/8" Long Tip	Hot ↕ Cold	46S 45S 44S, C44S 43S 42S	R46S R45S R44S R42S	A82 A52 A42, AT42 A32	AR82 AR52 AR42 AR32	J-18Y J-14Y J-12Y J-10Y J-9Y	XJ-20Y XJ-18Y XJ-14Y XJ-12Y XJ-10Y XJ-9Y
	7/16"	Hot ↕ Cold	47L 45L C45L 43L C43L		AL11 AL9 AL7 AL5	ARL8 ARL5	H-12 H-11 H-10 H-8	XH-12 XH-11 XH-10 XH-8
	7/16" Long Tip	Hot ↕ Cold	45LS 43LS		AL82 AL52	ARL82	H-18Y H-14Y	XH-14Y
	1/2"	Hot ↕ Cold	46FF, 46FFX 45F①, 45FF 44F①, 44FF 42FF	R46FF	AE6① AE4① AE3①	AER6① AER4①	L-14 L-10 L-7, L-85① L-5	XL-10 XL-7
	1/2" Long Tip	Hot ↕ Cold	46FFS 45FFS 44FFS		AE82 AE62① AE52 AE42		L-87Y① UL-15Y L-12Y	XL-87Y①
	3/4"	Hot ↕ Cold	47XL 46N②, 46XL 45N②, 45XL 44N② 43N② C42N②	R46N② R45N②,R45XL R44N② R44XL R43N②	AG7, AGZ7 AG5 AG4 AG3	AGR51 AGR41 AGR31	N-18 N-8 N-6 N-5 N-4 N-3	XN-8 XN-6 XN-5
	3/4" Long Tip	Hot ↕ Cold	46XLS 45XLS 44XLS	R45XLS R44XLS	AG82 AG52 AG42 AG32	AGR82 AGR52 AGR42 AGR32	N-16Y N-14Y N-12Y, UN-12Y N-9Y	XN-16Y XN-14Y XN-12Y XN-9Y
18 mm	Tapered Seat	Hot ↕ Cold	86T 85T 84T, C84T C83T	R85T CR84T CR83T	BF7 BTF6 BTF3, BTF31	BRF8 BRF6 BRF3	870 860 F-10	X-870 X-860 XF-10
	Tapered Seat Long Tip	Hot ↕ Cold	86TS 85TS, C85TS 84TS	R85TS R84TS	BF92 BF82 BF42 BF32 BF22	BRF82 BRF42	F-14Y F-11Y F-9Y F-83Y	XF-14Y XF-11Y XF-9Y

① 12-mm thread reach ② ⅜" thread length